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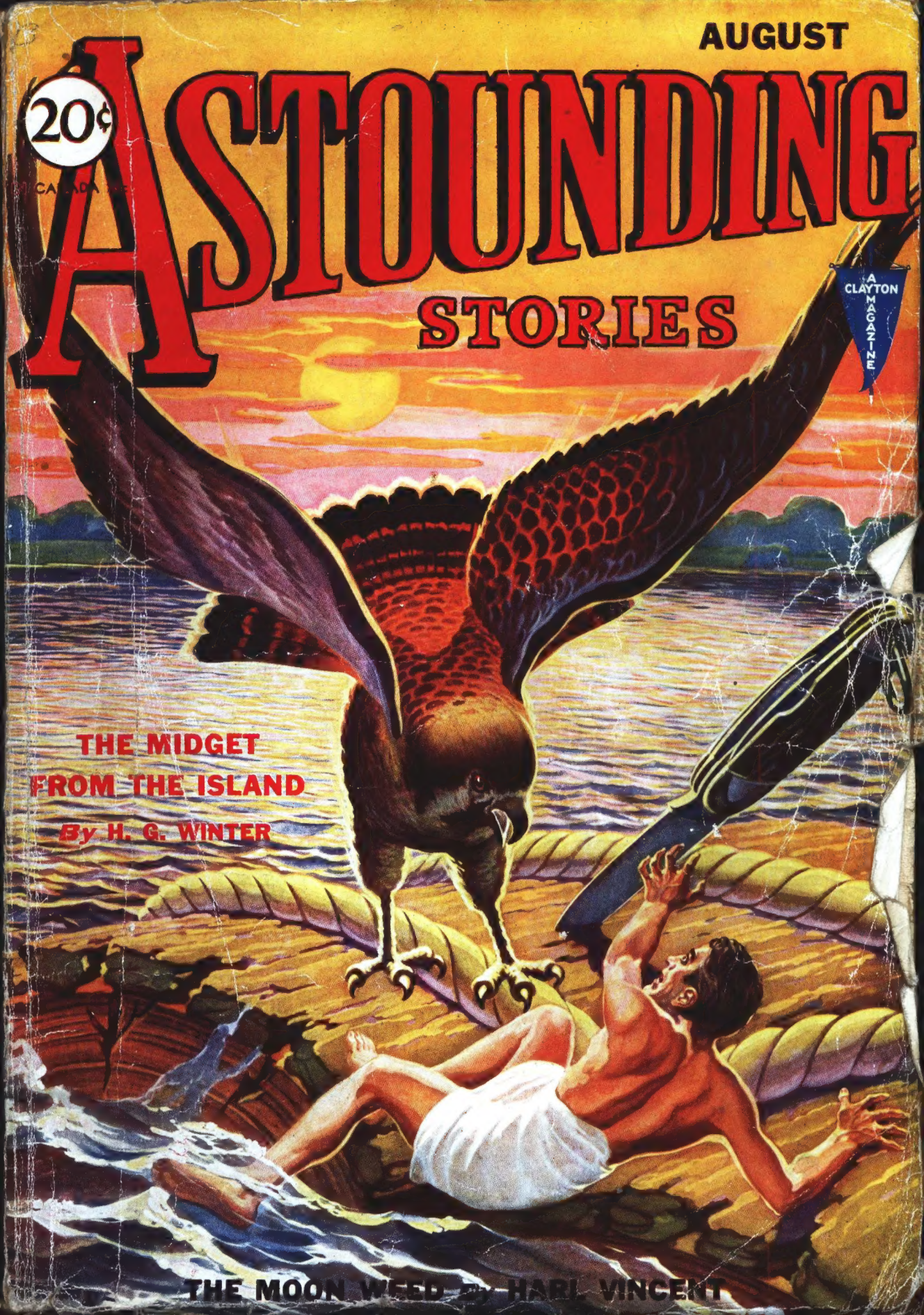
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By H. G. WINTER
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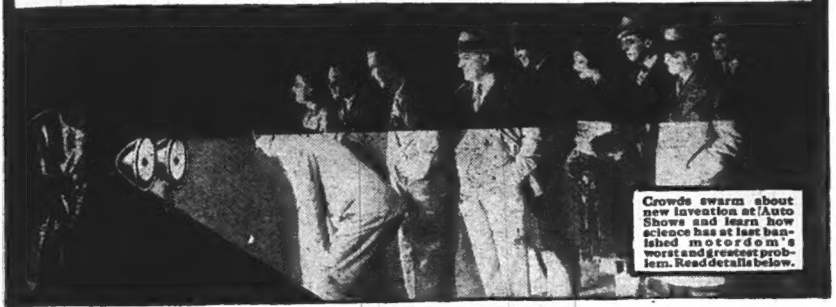
DANGEROUS DIMMING ENDED..
Road Light Doubled!



Crowds swarm about new invention at Auto Shows and learn how science has at last banished motordom's worst and greatest problem. Read details below.

AMAZING INVENTION FITS ANY HEADLIGHT...
Revolutionizes Night Driving!

At last! Night driving suddenly becomes actually SAFER than day! At one sweep, a tiny, inexpensive invention banishes glare yet doubles road illumination! Cuts through every light on the road! Fits any car. Use coupon QUICK for liberal FREE TEST OFFER!

Perfect-O-Lite even looks absolutely unique and entirely different. Every mile brings dozens more. It's the greatest "self-advertiser" ever known.

It is a well-known fact that motor car manufacturers have solved every big problem except one. As soon as the sun goes down at night, the highways of America break forth into a constant, rushing stream of "dimming and damning." Speed is cut down one-third to one-half. Every Monday morning finds the highways littered with broken glass, wrecks, cars in the ditch, overturned, shattered against telephone posts. Every man who ever groped dimly down the highway in traffic at night knows the horrible sensation of being half-blinded by cars on his left, unable to see the ditch on his right, his own lights seeming dim and shadowy and practically worthless. Now, in a twinkling, this curse of night driving is lifted completely and *inexpensively* from the shoulders of the entire motoring world!

FITS ANY HEADLIGHT

This new lighting discovery is called Perfect-O-Lite. It is a little invention that replaces the "bulbs" in your automobile headlights. No extra wiring or installation. Yet actually DOES double road illumination. Banishes need for Glare Shields. Cuts through the other fellow's light, yet absolutely cuts glare in his eyes. Makes runs, animals, children, detour signs, etc., visible at least three times as far. Makes night driving at 40 to 50 miles an hour safe and easy.

The secret of this new light is in the kind of "beam" or "ray" that it throws. Instead of ordinary light, this new invention throws a solid beam of double-reflected or "infused" light down the entire roadway. Shows up ditches at the side, as well as distant objects, absolutely clear, without the usual flickering "shadows." Space here limits further discussion of the facts.

Lights entire roadway, including ditch. Absolutely no glare to re-seeming car. Unique double-reflected, "infused" beam cuts through every light on the road.

Throws all light on roadway. Shoots through fog, mist, rain and snow like magic!

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Keep your breath beyond suspicion

with this antiseptic

. . . deodorizes swiftly and is pleasant to taste

Listerine overcomes odors that other mouthwashes fail to mask in 4 days

There are many mouthwashes, old and new, claiming antiseptic power, deodorizing effect, and pleasant taste. Compare them with Listerine, if you like. We are certain that every comparison will be in Listerine's favor.

Swift, germicidal action

No antiseptic mouthwash kills germs faster than Listerine, used full strength. It destroys bacteria in the shortest time accurately recorded by science.

That is important to remember, because many serious ailments start in the mouth, and because 95% of all halitosis (unpleasant breath) is caused either by fermentation of tiny food particles, or by minor infections of the oral tract. Listerine instantly halts fermentation and attacks infection. Removes 98% of the bacteria in saliva.

Amazing deodorant power

Recent searching scientific tests made by noted analytical chemists disclose Listerine's vast superiority as a deodorant. In experiment after experiment, Listerine showed immediate ability to overcome odors that ordinary mouthwashes fail to conceal in 4 days. Clearly, then, it is your best aid in conquering halitosis (unpleasant breath), the unforgivable social fault.

That delightful taste

Many mouthwashes otherwise effective are unpopular because of the flat, sickish taste that lingers in the mouth after their use.

Contrast this annoying effect with the brisk, delightful, refreshing flavor of Listerine.

Benefits tissue and teeth

When you use a mouthwash you like to think that you are not breaking down the resistance of mouth tissue. That you are not attacking the precious enamel of the teeth, nor the metallic fillings that may be in them. Only by careful choice of a mouthwash can you be sure of avoiding such troubles. Listerine's enthusiastic endorsement by the medical profession is based on the fact that it is first of all non-poisonous, and that its effect on the mucous membrane tends to be soothing and healing. Its ingredients are not harsh; and therefore do not damage either tissue or tooth structure. Indeed, its effect on both is protective.

Listerine's 8 points of superiority over other mouthwashes:

1. Absolutely safe to use.
2. Quick deodorant power.
3. Instant halting of fermentation.
4. Swift destruction of germs.
5. No damaging effect on tooth structures.
6. Does not attack metal fillings.
7. Heals and soothes tissue.
8. Requires no dilution.

No dilution required

Here is another point for Listerine. You know when you use it just as it comes from the bottle that you are getting certain germicidal and deodorizing effect. Dilution, with its uncertainties and its dangers, is not one of your troubles.

Keep Listerine always handy in home and office, and carry it with you when you travel. It is a splendid first aid until the doctor comes.

And, moreover, it is your assurance that your breath is beyond reproach. Lambert Pharmacal Co., St. Louis, Mo., U. S. A.

LISTERINE—*the Safe Antiseptic*—kills germs in the fastest time accurately recorded by science

He caught a glimpse of the grinning fish-face.

The Danger from the Deep

By Ralph Milne Farley

WITHIN a thick-walled sphere of steel eight feet in diameter, with crystal-clear fused-quartz windows, there crouched an alert young scientist, George Abbot. The sphere rested on the primeval muck and slime at the bottom of the Pacific Ocean, one mile beneath the surface.

Marooned on the sea-floor, his hoisting cable cut, young Abbot is left at the mercy of the man-sharks.

The beam from his 200-watt searchlight, which shot out through one of his three windows into the dark blue depths beyond, seemed

faint indeed, yet it served to illuminate anything which crossed it, or on which it fell.

For a considerable length of time since his descent to the ocean floor, young Abbot had clung to one of the thick windows of his bathysphere, absorbed by the marine life outside. Slender small fish with stereoscopic eyes, darted in and out of the beam of light. Swimming snails floated by, carrying their own phosphorescent lanterns. Paper-thin transparent crustaceans swam into view, followed by a few white shrimps, pale as ghosts. Then a mist of tiny fish swept across his field of vision. Abbot cupped his face in his hands, and stared out.

The incongruous thought flashed across his mind that thus he had often sat by the window of his club in New York, and gazed out at the passing motor traffic.

His searchlight cut a sharp swath through the blue muck. More than once he thought he saw large moving fish-like forms far away.

"Speed up the generator," he called into his phone.

Immediately the shaft of light brightened. He set about trying to focus upon one of those dim elusive shapes which had so intrigued him.

BUT suddenly the searchlight went out! Intent on repairing the apparatus as rapidly as possible, Abbot snapped the button-switch, which ought to have illuminated the interior of his diving-sphere; but the lights did not go on. Then he noticed that the electric fan, on which he depended to keep his air-supply properly mixed, had stopped.

He spoke into the telephone transmitter, which hung in front of his mouth: "Hi, there, up on the boat! My electric power is cut off. I'm down here with my fan stopped and my heat cut off. Hoist me up, and be quick about it!"

"O. K., sir."

As the young man waited for the winch to get under way on the boat a mile above him, he pulled out his electric pocket flashlight and sent its feeble ray out through his quartz-glass window into the dim royal-purple depths beyond, in one last attempt to get a look at those mysterious fish-shapes which had so intrigued him.

And then he saw one of them distinctly.

Evidently they had swum closer when the glow of his searchlight had stopped; and so the sudden flash of his pocket-light had taken them by surprise.

For, as he snapped it on, he caught an instant's glimpse of a grinning fish-face pressed close against the outside of his thick window-pane, as though trying to peer in at him. The fish-face somewhat resembled the head of a shark, except that the mouth was a bit smaller and not quite so leeringly brutal, and the forehead was rather high and domed.

But what most attracted Abbot's attention, in the brief instant before the startled fish whisked away in a swirl of phosphorescent foam, was the fact that, from beneath each of the two pectoral fins, there protruded what appeared to be a skinny human arm, terminating in three fingers and a thumb!

Then the fish was gone. Abbot snapped off his little light.

The diving-sphere quivered, as the hoisting-cable tautened. But suddenly the sphere settled back to the bottom of the sea with a jarring thud. "Cable's parted, sir!" spoke a frantic voice in his ear-phones.

FOR a moment George Abbot sat stunned with horror. Then his mind began to race, like a squirrel in a cage, seeking some way of escape.

Perhaps he could manage to unscrew the 400-pound trap door at the

top of the sphere, and shoot to the surface, with the bubbling-out of the confined air. But his scientifically trained mind made some rapid calculations which showed him this was absurd.

At the depth of a mile, the pressure is roughly 156 atmospheres, that is to say, 156 times the air-pressure at the surface of the earth; and the moment that his sphere was opened to this pressure, he would be blow back inwardly away from the manhole, and the air inside his sphere would suddenly be compressed to only 1/156 of its former volume.

Not only would this pressure be sufficient to squash him into a mangled pulp, but also the sudden compression of the air inside the sphere would generate enough heat to fry that mangled pulp to a crisp cinder almost instantly.

As George Abbot came to a full realization of the horror of these facts, he recoiled from the trap-door as though it were charged with death.

"For Heaven's sakes, do something!" he shrieked in agony into the transmitter.

"Courage, sir," came back the reply. "We are rigging up a grapple just as fast as we can. Long before your oxygen gives out, we shall slide it down to you along the telephone line, which is the only remaining connection between us. When it settles about your sphere, and you can see its hooks outside your window by the light of your pocket-flash, let us know, and we'll trip the grapple and haul you up."

"Thank you," replied the young man.

HE was calm now, but it was an enforced and numb kind of calmness. Mechanically he throttled down his oxygen supply, so as to make it last longer. Mechanically he took out his notebook and pencil and started to write down, in the dark, his experiences; for he was determined to leave a full account for posterity, even though he himself should perish.

After setting down a categorical description of the successive partings of the electric light cable and the hoist cable, and his thoughts and feelings in that connection, he described in detail the shark with hands, which he had seen through the window of his sphere. He tried to be very explicit about this, for he realized that his account would probably be laid, by everyone, to the disordered imagination of his last dying moments; being a true scientist, George Abbot wanted the world to believe him, so that another sphere would be built and sent down to the ocean depths, to find out more about these peculiar denizens of the deep.

Of course, no one would believe him. This thought kept drumming in his ears. No one—except Professor Osborne. Old Osborne would believe!

George Abbot's mind flashed back to a conversation he had had with the old professor, just before the oil interests had sent him on this exploring trip to discover the source of the large quantities of petroleum which had begun to bubble up from the bottom of a certain section of the Pacific very near where Abbot now was.

OSBORNE had said, "This petroleum suggests a gusher to me. And what causes gushers? Human beings, boring for oil, to satisfy human needs."

"But, Professor," Abbot had objected, "there can't be any human beings at the bottom of the sea!"

"Why not?" Professor Osborne had countered. "Life is supposed to have originated spontaneously in the slime of the ocean depths; therefore that part of the earth has had a head-start on us in the game of evolution. May not this head-start have been

maintained right down to date, thus producing at the bottom of the sea a race superior to anything upon the dry land?"

"But," Abbot had objected further, "if so, why haven't they come up to visit or conquer us? And why haven't we ever found any trace of them?"

"Quite simple to explain," the old professor had replied. "Any creature who can live at the frightful pressures of the ocean depths could never survive a journey even halfway to the surface. It would be like our trying to live in an almost perfect vacuum. We should explode, and so would these denizens of the deep, if they tried to come up here. Even one of their dead bodies could not be brought to the surface in recognizable form. No contact with them will ever be possible, nor will they ever constitute a menace to any one—for which we may thank the Lord!"

George Abbot now reviewed this conversation as he crouched in his diving-sphere in the purple darkness of the marine depths. Yes, old Osborne would believe him. The diary must be written for Osborne's eyes.

ABBOT sent another beam from his pocket light suddenly out into the water; and this time he surprised several of the peculiar fish. These, like the first, had arms and hands and high intelligent foreheads.

Then suddenly Abbot laughed a harsh laugh. Old Osborne had been wrong in one thing, namely in saying that the super-race of the deep would never be a menace to anyone. They were being a menace to George Abbot, right now, for it was undoubtedly they who had cut his cables. Probably they were possessed of much the same scientific curiosity with regard to him as he was with regard to them, and so they had determined to secure him as a museum specimen.

The idea was a weird one. He laughed again, mirthlessly.

"What is the matter, sir?" came an anxious voice in his ear-phones.

"Hurry that grapple!" was his reply. "I have found out what cut my cables. There are some very intelligent-looking fish down here, and I think they want me for—"

An ominous click sounded in his ears. Then silence.

"Hello! Hello there!" he shouted. "Can you hear me up on the boat?"

But no answer came back. The line remained dead. The strange fish had cut George Abbot's last contact with the upper world. The grapple-hooks could never find him now, for there was now not even a telephone cable to guide them down to his sphere.

The realization that he was hopelessly lost, and that he had not much longer to live, came as a real relief to him, after the last few moments of frantic uncertainty.

HOPING that his sphere would eventually be found, even though too late to do him any good, he set assiduously to work jotting down all the details which he could remember of those strange denizens of the deep, the man-handed sharks, which he was now firmly convinced were the cause of his present predicament.

He stared out through one of his windows into the brilliant blue darkness, but did not turn on his flash-light. How near were these enemies of his, he wondered?

The presence of those menacing man-sharks, just outside the four-inch-thick steel shell, which withstood a ton of pressure for each square inch of its surface, began to obsess young Abbot. What were they doing out there in the watery-blue midnight? Perhaps, having secured his sphere as a scientific specimen, they were already preparing to cut into it, so as to see what was inside. That

these fish could cut through four inches of steel was not so improbable as it sounded, for had they not already succeeded in severing a rubber cable an inch and a half thick, containing two heavy copper wires, and also two inches of the finest non-kinking steel rope!

The young scientist flashed his pocket torch out through the thick quartz pane, but his enemies were nowhere in sight. Then he fell to calculating his oxygen supply. His normal consumption was about half a quart per minute, at which rate his two tanks would be good for thirty-six hours. His chemical racks contained enough soda-lime to absorb the excess carbon dioxid, enough calcium chlorid to keep down the humidity and enough charcoal to sweeten the body odors for much more than that period.

For a moment, the thought of these facts encouraged him. He had been down less than two hours. Perhaps the boat above him could affect his rescue in the more than thirty-four hours which remained!

BUT then he realized that he had failed to take into consideration the near-freezing temperature of the ocean depths. This temperature he knew to be in the neighborhood of 39 degrees Fahrenheit—even though no thermometer hung outside his window, as none could withstand the frightful pressures at the bottom of the sea. For it is one of the remarkable facts of inductive science that man has been able to figure out *a priori* that the temperature at all deep points of the ocean, tropic as well as arctic, must always be stable at approximately 39 degrees.

Abbot was clad only in a light cotton sailor suit, and now that his source of heat had been cut off by the severing of his power lines, his prison was rapidly becoming unbearably chilly. His thick steel sphere constituted such a perfect transmitter of heat that he might almost as well have been actually swimming in water of 39 degrees temperature, so far as comfort was concerned.

Abbot's emotions ran all the gamut from stupefaction, through dull calmness, clear-headed thought, intense but aimless mental activity, nervousness, frenzy and insane delirium, back to stupefaction again.

During one of his periods of calmness, he figured out what an almost total impossibility there was of the chance that his ship, one mile above him on the surface, could ever find his sphere with grappling hooks. Yet he prayed for that chance. A single chance in a million sometimes does happen.

SEVERAL hours had by now elapsed since the parting of the young scientist's cables. It was bitterly cold inside the sphere. In order to keep warm, he had to exercise during his calm moments as systematically as his cramped quarters would permit. During his frantic moments he got plenty of exercise automatically. And of course all this movement used up more than the normal amount of oxygen, so that he was forced to open the valves on his tanks to two or three times their normal flow. His span of further life was thereby cut to ten or twelve hours, if indeed he could keep himself warm for that long.

Why didn't the people on the boat do something!

He was just about to indulge in one of his frantic fits of despair, when he heard or felt—the two senses being strangely commingled in his present situation—a clank or thump upon the top of his bathysphere. Instantly hope flooded him. Could it be that the one chance in a million had actually happened, and that a grapple from the boat above had actually found him?

With feverish expectation, he pressed the button of his little elec-

tric pocket flashlight, and sent its feeble beam out through one of the quartz-glass windows into the blue-black depths beyond.

No hooks in front of this window. He tried the others. No hooks there, either. But he did see plenty of the superhuman fish. Eighteen of them, he counted, in sight at one time. And also two huge snake-like creatures with crested backs and maned heads, veritable sea-serpents.

As there was nothing the young man could do to assist in the grappling of his sphere by his friends in the boat above, he devoted his time to jotting down a detailed description of these two new beasts and of their behavior.

One of the sharks appeared to be leading or driving them up to the bathysphere; and when they got close enough, Abbot was surprised to see that they wore what appeared to be a harness!

THE clanking upon the bathysphere continued, and now the young man learned its cause. It was not the grapple hooks from his ship, but chains—chains which the man-armed sharks were wrapping around the bathysphere.

Two more of the harnessed sea-serpents swam into view, and these two were hitched to a flat cart: an actual cart with wheels. The chains were attached to the harness of the original two beasts; they swam upward and disappeared from view; and the sphere slowly rose from the mucky bottom of the sea, to be lowered again squarely on top of the cart. The cart jerked forward, and a journey over the ocean floor began.

Then the little pocket torch dimmed to a dull red glow, and the scene outside faded gradually from view. Abbot switched off the now useless light and set to work with scientific precision to record all these unbelievable events.

In his interest and excitement, he had forgotten the ever-increasing cold; but gradually, as he wrote, the frigidity of his surroundings was forced on his consciousness. He turned on more oxygen, and exercised frantically. Meanwhile the cart, carrying his bathysphere, bumped along over an uneven road.

From time to time, he tried his almost exhausted little light, but its dim red beam was completely absorbed by the blue of the ocean depths, and he could make out nothing except two bulking indistinct shapes, writhing on ahead of him. Finally even this degree of visibility failed, and he could see absolutely nothing outside.

He was now so chilled and numb that he could no longer write. With a last effort, he noted down that fact, and then put the book away in its rack.

He began to feel drowsy. Rousing himself, he turned on more oxygen. The effect was exhilaration and a feeling of silly joy. He began to babble drunkenly to himself. His head swam. His mind was in a daze.

IT seemed hours later when he awoke. Ahead of him in the distance there was a dim pale-blue light, against which there could be seen, in silhouette, the forms of the two serpentine steeds and their fish-like drivers. Abbot's hands and feet were completely numb, but his head was clear.

As they drew nearer to the light, it gradually took form, until it turned out to be the mouth of a cave. The cart entered it.

Down a long tunnel they progressed, the light getting brighter and brighter as they advanced. The color of the light became a golden green. The rough stone walls of the tunnel could now be seen; and finally there appeared, ahead, two semicircular doors, swung back against the sides of the passage.

Beyond these doors, the tunnel walls were smooth and exactly cylindrical, and on the ceiling there were many luminous tubes, which lit up the place as brightly as daylight. The cart came to a stop.

The young scientist could now see with surprising distinctness his captors and their serpentine steeds, and even the details of the chains and the harness. He tried to pick up his diary, so as to jot down some points which he had theretofore missed; but his hands were too numb. But at least he could keep on observing; so he glued his eyes to the thick quartz window-pane once more.

A short distance ahead in the passage there was another pair of doors. Presently these swung open and the cavalcade moved forward. Five or six successive pairs of doors were passed in this manner, and then the sea-serpents began to thrash about and become almost unmanageable. It was evident that some change not to their liking had taken place in their surroundings.

AT last, as one of the portals swung open, young Abbot saw what appeared to be four deep-sea diving-suits. Could these suits contain human beings? And if so, who? It seemed incredible, for no diving-suit had ever been devised in which a man could descend to the depth of one mile, and live.

These four figures, whatever they were, came stolidly forward and took charge of the cart. One of the sharks swam up to them and appeared to talk to them with its hands. Then the sharks unhitched the two sea-serpents and led them to the rear, and Abbot saw them no more.

The four divers picked up the chains, and slowly towed the cart forward, their clumsy, ponderous movements contrasting markedly with the swift and sure swishings which had characterized the man-sharks and their snake-like steeds.

Several more pairs of doors were passed, and then there met them four figures in less cumbersome diving-suits, like those ordinarily used by men just below the surface of the sea. One of the deep-sea divers then pressed his face close to the outside of one of the windows of the bathysphere, as though to take a look inside; but the four newcomers waved him away, and hurriedly picked up the chains. Nevertheless, in that brief instant, Abbot had seen within the head-piece of the diver what appeared to be a bearded human face.

Several more pairs of doors were passed. The four deep-sea divers floundered along beside the cart, quite evidently having more and more difficulty of locomotion as each successive doorway was passed, until finally they lay down and were left behind.

At last the procession entered a section of tunnel which was square, instead of circular, and in which there was a wide shelf along one side about three feet above the floor. The four divers then dropped the chains, and one by one took a look at Abbot through his window.

And he at the same time took a most interested look at them.

They had unmistakable human faces!

HE must be dreaming! For even if Osborne was right about his supposed super-race at the bottom of the sea, this race could not be human, for the pressures here would be entirely too great. No human being could possibly stand two thousand pounds per square inch!

Having satisfied their curiosity, the four divers pulled themselves up onto the shelf, and sat there in a row with their legs hanging over.

Abbot glanced upward at the ceiling lights, but these had become strangely blurred. There seemed to be an opaque barrier above him, and this barrier seemed to be slowly de-

scending. The lights blurred out completely, and were replaced by a diffused illumination over the entire ripply barrier. And then it dawned on the young man that this descending sheet of silver was the surface of the water. He was in a lock, and the water was being pumped out.

The surface settled about the helmets of the divers, and their helmets disappeared; then their shoulders and the rest of them. At last it reached the level of Abbot's window. The divers could again be seen, and among them on the shelf there stood a half dozen naked bearded men, clad only in loin-cloths. They had evidently entered the lock while the water was subsiding.

THESE men unbuckled the helmets of the divers and helped them out, and then splashed down into the water and peered in through the windows of the bathysphere. Presently some of them left through a door at the end of the platform, but soon reappeared with staging, which they set up around the sphere. Then, climbing on top, they got to work on the man-hole cover.

As George Abbot realized their purpose, he became frantic. Although these men appeared to be human, just like himself, yet his scientifically-trained mind told him that they must be of some very special anatomical structure, in order to be able to withstand the immense pressures at the bottom of the Pacific. It was all right for them to be out there, but it would be fatal to him!

And then the heavy circular door above him began slowly to revolve.

This was terrible! In a moment the crushing pressures of the depths would come seeping in. Rising unsteadily upon his knees, the young man tried with his fingers to resist the rotation of the door; but it continued to turn.

Yet no pressure could be felt. The door became completely unscrewed. It was pried up, and slid off the top of the bathysphere, to crash upon the floor outside. Inquisitive bearded faces peered down through the hole.

Young Abbot slumped to the cold bottom of the sphere and stared back at them. He was saved; incredibly saved! These were real people, the air was real air and he must therefore be on the surface of the earth, instead of at the bottom of the Pacific as he had imagined! With a sigh of relief, he fainted.

WHEN he came to his senses again, he was lying in a bed in a small room. Bending over him was the sweetest feminine face that he had ever seen.

The girl seemed to be about twenty years of age. She was clad in a clinging robe of some filmy green substance. Her hair was honey-brown, short and curly, and her forehead high and intelligent. Her eyes, an indescribable shade of deep violet, were matchlessly set off by her ivory skin.

The young man smiled up at her, and she smiled back. Thus far it had not occurred to him to wonder where he was, or why. No recollection of his recent strange adventures came to him. To him this was an exotic dream, from which he did not care to awake.

She spoke. Her words were unintelligible, and unlike any language which George Abbot knew or had even heard; and he was an accomplished linguist in addition to his other attainments.

And her words were not all that was strange about her speech, for the very tones of her voice sounded completely unhuman, although not displeasing. Her talk had a metallic ring to it, like the brassy blare of temple gongs, and yet was so smooth and subdued as to be sweeter than any sound that the young scientist had ever heard before.

"Beautiful dream fairy," replied the enraptured young man, "I haven't the slightest idea what you are saying, but keep right on. I like it."

His own voice sounded crass and crude compared to hers. At his first words she gave a start of surprise, but thereafter the sound did not appear to grate on her ears.

THEN one of the bearded men in loin-cloths entered, and he and the girl talked together, quite evidently about their patient. The man's voice had the same strange metallic quality to it as that of the girl, but was deeper, so that it boomed with the rich notes of a bell.

At the sight of the man, young Abbot's memory swept back, and he remembered the adventure of his diving-sphere, and its capture, one mile down, by the strange shark-fish with human hands and arms. But how he had reached the surface of the earth again, he couldn't figure out. Nor did he particularly care.

The strange man withdrew, and the girl sat down beside the bed and smiled at Abbot. He smiled back at her.

Presently another girl entered and called, "Milli!"

The girl beside the bed started, and looking up asked some question, to which the other replied.

The newcomer brought in some strange warm food in a covered dish and then withdrew. The first girl proceeded to feed her patient.

After the meal, which tasted unlike anything which the young man had ever eaten before, the beautiful nurse again essayed conversation with him. She seemed perplexed and a bit frightened that he could not understand her words. Somehow, the young man sensed that this girl had never heard any other language than her own, and that she did not even know that other languages existed.

STRENGTHENED by his food, he determined to set about learning her language as soon as possible. So he pointed at her and asked, "Milli?"

She nodded, and spoke some word which he took for "yes."

Then he pointed to himself and said, "George."

She understood, but the word was a difficult one for her to duplicate in the metallic tongue of her people. She made several attempts, until he laughingly spoke her word for "yes."

Then he pointed to other objects about the room. She gave him the names of these, but he could easily see that she felt that, if he did not know the names for all these common things, there must be something the matter with him.

He wondered how he could make her understand that there were other languages in the world than her own; and then he remembered the sharks with their hands and what he had taken to be their sign language. Perhaps Milli at least knew of the existence of the sign language. This would afford a parallel; for if she realized that there were two languages in the world, might there not be three?

So Abbot made some meaningless signs with his fingers. Milli quite evidently was accustomed to this kind of talk, but she was further perplexed to find that George talked gibberish with his hands as well as with his mouth.

She made some signs with her hands, and then said something orally. Young Abbot instantly pointed to her mouth, and held up one finger; then to her hands, and held up two; then to his own mouth, and held up three, at the same time speaking a sentence of English. Instantly she caught on: there were three languages in the world. And thereafter she no longer regarded him as crazy.

For several hours she taught him. Then another meal was brought, after which she left him, and the lights went out.

HE awakened feeling thoroughly rested and well. The lights were on and Milli was beside him.

He asked for his clothes. They were brought. Milli withdrew and he put them on.

After breakfast, which they ate together, one of the bearded men came and led him out through a number of winding corridors into a larger room, in which there was a closed spherical glass tank, about ten feet in diameter, containing one of the human sharks. Around the tank stood five of the bearded men.

One of them proceeded to address Abbot, but of course the young American could not make out what he was saying. This apparent lack of intelligence seemed to exasperate the man; and finally he turned toward the tank, and engaged in a sign language conference with the fish; then turned back to Abbot again and spoke to him very sternly.

But Abbot shook his head and replied, "Milli. Bring Milli."

One of the other men flashed a look of triumph at their leader, and laughed.

"Yes," he added, "bring Milli."

The leader scowled at him, and some words were interchanged, but it ended in Milli being sent for. She apparently explained the situation to the satisfaction of the fish, to the intense glee of the man who had sent for her, and to the rather complete discomfiture of the leader of the five.

Abbot later learned that the leader's name was Thig, and that the name of the gleeful man was Dolf.

The reception over, Milli led Abbot back to his room.

THERE ensued many days—very pleasant days—of language instruction from Milli. Dolf and Thig and others of the five came frequently, to note his progress and to talk with him and ask him questions.

A sitting room was provided for him, adjoining his sleeping quarters. Milli occupied quarters nearby.

Within a week he had mastered enough of the language of these people, for their strange history began to be intelligible to him.

In spite of the fact that the air here was at merely atmospheric pressure, nevertheless this place was one mile beneath the surface of the Pacific. Milli and her people lived in a city hollowed out of a reef of rocks, reinforced against the terrific weight of the water and filled with laboratory-made air. They had never been to the surface of the sea.

The fish with the human arms were their creators and their masters.

Professor Osborne had been right. The fish of the deep, having a head start on the rest of the world, had evolved to a perfectly unbelievable degree of intelligence. Centuries ago they had built for themselves the exact analog of George Abbot's bathysphere, and in it they had made much the same sort of exploring trips to the surface that he had made down into the deeps. But their spheres had been constructed to keep in, rather than to keep out, great pressure.

Their scientists had gathered a wealth of data as to conditions on the surface, and had even seen and studied human beings. But their insatiable scientific curiosity had led them to want to know more about the strange country above them and the strange persons who inhabited it. And so they set about breeding, in their own laboratories, creatures which should be as like as possible to those whom they had observed on the surface.

OF course, this experiment necessitated their first setting up an air-filled partial vacuum similar to

that which surrounds the earth. But they had persisted. They had brought down samples of air from the surface of the sea, and had analyzed and duplicated it on a large scale.

Finally, through long years, they had so directed—and controlled the course of evolution in their breederies, as first to be able to produce creatures which could live in air at low pressures, and then to evolve the descendants of those creatures into intelligent human beings.

Some of the lower types of this evolutionary process, both in the direct line of descent of man, and among the collateral offshoots, had been retained for food and other purposes. Abbot, with intense scientific interest, studied these specimens in the zoo of the underwater city where he was staying.

Plans had been in progress for some time, among the fish-folk and their human subjects, to send an expedition to the surface. And now the shark masters had fortunately been able to secure alive an actual specimen of the surface folk—namely, George Abbot. The expedition was accordingly postponed until they could pump out of the young scientist all the information possible.

Abbot was naturally overjoyed at the prospect. This would not only get him out of here—but think what it would mean to science!

The plans of the sharks were entirely peaceful. Furthermore there were only about two hundred of their laboratory-bred synthetic human beings, and so these could constitute no menace to mankind. Accordingly he enthusiastically assured them that they could depend upon the hearty cooperation of the scientists of the outer earth.

DURING all his stay so far in this cave city, Abbot had been permitted to come in contact only with Milli, the members of the Committee of Five, and an occasional guard or laboratory assistant. Yet, in spite of the absence of personal contacts with other members of this strange race, Abbot was constantly aware of a background of many people and tense activity, which kept the wheels of industry and domestic economy turning in this undersea city.

Although the young man readily accustomed himself to the speech and food and customs of this strange race, his personal modesty and neatness revolted at the loin-cloths and beards of the men; and so, by special dispensation, he was permitted to wear his sailor suit and to shave.

The Committee of Five, who constituted a sort of ruling body for the city, interviewed him at length, cross-examined him most skilfully and took copious notes. But there seemed to be a strange lack of common meeting ground between their minds and his, so that very often they were forced to call on Milli to act as an intermediary. The beautiful young girl seemed able to understand both George Abbot and the leaders of her own people with equal facility.

A number of specially constructed submarines had already been built to carry the expedition to the surface. Before it came time to use them, Abbot tried to paint as glowing a picture as possible of life on earth; but he found it necessary to gloss over a great many things. How could he explain and justify war, liquor, crime, poverty, graft, and the other evils to which constant acquaintance has rendered the human race so calloused?

HE was unable to deceive the men of the deep. With their super-intelligence, they relentlessly unearthed from him all the salient facts. And, as a result of their discoveries, their initial friendly feel-

ing for the world of men rapidly developed into supreme contempt.

But Abbot on the other hand developed a deep respect for them. Their chemistry and their electrical and mechanical devices amazed and astounded him. They even were able to keep sun-time and tell the seasons, by means of gyroscopes!

Age was measured much as it is on the surface. This fact was brought to Abbot's attention by the approach of Milli's twentieth birthday.

Strange to relate, she seemed to dread the approach of that anniversary, and finally told Abbot the reason.

"It is the custom," said she, "when a girl or a boy reaches twenty, to give a very rigorous intelligence test. In fact, such a test is given on every birthday, but the one on the twentieth is the hardest. So far, I have just barely passed each test, which fact marks me as of very low mentality indeed. And, if I fail *this* time, they will kill me, so as to make room for others who have a better right to live."

"Impossible!" exclaimed the young man indignantly. "Why, you have a better mind than those of many of the leading scientists of the outer world!"

"All the same," she gloomily replied, "it is way below standard for down here."

ON the day of the test, he did his best to cheer her up. Dolf also came—she seemed to be an especial protege of his—and gave her his encouragement. He had been coaching her heavily for the examinations for some time previous.

But later in the day she returned in tears to report to Abbot that she had failed, and had only twenty-four hours to live. Before he realized what he was doing, Abbot had seized her in his arms, and was pouring out to her a love which up to that moment he had not realized existed.

Finally her sobbing ceased, and she smiled through her tears.

"George, dear," said she, "it is worth dying, to know that you care for me like this."

"I won't let them kill you!" asserted the young man belligerently. "They owe me something for the assistance which I am to give them on their expedition. I shall demand your life as the price of my cooperation. Besides, you are the only one of all your people who has brains enough to understand what I tell them about the outer earth. It is they who are weak-minded; not you!"

But she sadly shook her head.

"It would never do for you to sponsor me," said she, "for it would alienate my one friend in power, Dolf. He loves me; no, don't scowl, for I do not love him. But, for the safety of both of us, we must not let him know of our love—yet."

"'Yet'?" exclaimed Abbot, "when you have less than a day to live?"

"You have given me hope," the girl replied, "and also an idea. Dolf promised to appeal to the other members of the Five. I have just thought of a good ground for his appeal; namely, my ability to translate your clumsy description into a form suited to the high intelligence of our superiors."

"'Clumsy'?" exclaimed the young man a bit nettled.

"Oh, pardon me, dear. I'm so sorry," said she contritely. "I didn't mean to let it slip. And now I must rush to Dolf and tell him my idea."

"Don't let him make love to you, though!" admonished Abbot gloomily.

She kissed him lightly, and fled.

A HALF hour later she was back, all smiles. The idea had gone across big. Dolf, as the leader of the projected expedition, had demanded that Milli be brought along as liaison officer between them and their guide;

and the other four committeemen had reluctantly acceded. The execution was accordingly indefinitely postponed.

The young couple spent the evening making happy plans for their life together on the outer earth, for as soon as they should arrive in America, Dolf would have no further hold over them.

The next day, the Committee of Five announced that, for a change, they were going to give George Abbot an intelligence test. He had represented himself as being one of the scientists of the outer earth; accordingly, they could gauge the caliber of his fellow countrymen by determining his I. Q.

Milli was quite agitated when this program was announced, but the ordeal held no terrors for George Abbot. Had he not taken many such tests on earth and passed them easily?

So he appeared before the Committee of Five with a rather cocky air. He had yet to see an intelligence test too tricky for him to eat alive.

"Start him with something easy," suggested Dolf. "Perhaps they don't have tests on the outer earth. You know, one gains a certain facility by practice."

"Milli didn't, in spite of all the practicing which you gave her," maliciously remarked Thig.

Dolf glowered at him.

"WHAT is the cube root of 378?" suddenly asked one of the other members of the committee.

"Oh, a little over seven," hazarded Abbot.

"Come, come," boomed Thig: "give it to us exactly."

"Well, seven-point-two, I guess."

"Don't guess. Give it exact, to four decimal places."

"In my head?" asked Abbot incredulously.

"Certainly!" replied Thig. "Even a child could do that. We're giving you *easy* questions to start with."

"Start him on *square* root," suggested Dolf kindly. "Remember he isn't used to these tests like our people are."

So they tried him with square root, in which he turned out to be equally dumb.

Abstract questions of physics and chemistry, he did better on; but the actual quantitative problems, which they expected him to solve in his head, stumped him completely.

Then they asked him about education on earth, and the qualifications for becoming a scientist, and who were the leaders in his field, and what degrees they held, and what one had to do to get those degrees, etc. Finally they dismissed him. Dolf then sent for Milli.

She was gone about an hour, and returned to Abbott wide-eyed and incredulous.

"Oh, George," said she, lowering her voice, "Dolf tells me that your intelligence is below that of a five-year-old child! Perhaps that is why you and I get along so well together: we are both morons."

HE started to protest, but she silenced him with a gesture and hurried on, "I am not supposed to tell you this, but I want you to know that your examination to-day has resulted in a complete change in their plans for the expedition to the surface. They have consulted with the leaders of our masters, and they agree with them."

She was plainly agitated.

"What is it, dear?" asked Abbot, with ominous foreboding.

Milli continued: "Early during your test, when you demonstrated that you couldn't do the very simplest mathematical problems in your head, they began to doubt your boastings that you are a scientist. But you were so ingenuous in your an-

swers about conditions on the surface, that finally their faith in your honesty returned. If you are a scientist among men, as they now believe, then the average run of your people must be mere animals. This explains what has puzzled them before; namely, how the people of the earth tolerate poverty and unemployment and crime, and disease and war."

"Well?"

"And so a mere handful of our people, by purely peaceful means, could easily make themselves the rulers of the earth. Probably this would be all for the best; but somehow, my feelings tell me that it is not. I know only too well what it is to be an inferior among intelligent beings; so will not your people be happier, left alone to their stupidity, just as I would be?"

GEORGE ABBOT was crushed. This frank acceptance by Milli of the alleged fact that he was a mere moron, was most humiliating. And swiftly he realized what a real menace to the earth, was this contemplated invasion from the deeps.

All that was worst in the world above would taint these intellectual giants of the undersea. They would rise to supremacy, and then would become rapacious tyrants over those whom they would regard as being no more than animals.

He had witnessed jealousies among them down below. Might not these jealousies flame into huge wars, when translated to the world above? Giants striving for mastery, using the human cattle as cannon fodder! He painted to the girl a word-picture of the horrible vision which he foresaw.

The invasion must be stopped at all costs! He and Milli must pit their puny wits against these supermen!

But what could they do? As they were pondering this problem, a girl entered their sitting room—the same who had brought Abbot's breakfast on his first day in the caves. Milli introduced George to the newcomer, whose name was Romehl.

Romehl appeared so woebegone that the young American ventured to inquire if she too had been having difficulty with one of her tests. But that was not the trouble; hers was rather of the heart.

About the same age as Milli, Romehl had recently passed her twentieth birthday test and hence was eligible to marry; so she and a young man named Hakin had requested the fish-masters to give them the requisite permission. But their overlords for some reason had peremptorily denied the request. Romehl and Hakin were desolate.

YOUNG Abbott's sympathies were at once aroused.

"Can't something be done?" he started to ask.

But Milli silenced him with a warning glance. "Of course not!" she said. "Who are we to question the judgment of our all-knowing masters?"

Romehl had really come to Milli just to pour her troubles into a friendly ear, rather than because she hoped to get any helpful ideas. So she had a good cry, and finally left, somewhat comforted.

George and Milli then took up again the problem of saving the outer earth from the threatened invasion. Milli suggested that they go peaceably with the expedition, and then warn the authorities of America at the first opportunity after their arrival; but Abbot pointed out that this would merely result in their both being shut up in some insane asylum, as no one would believe such a crazy story as theirs.

The time for lights to be put out arrived without their thinking of any better idea.

Next day Milli spent considerable time with Dolf, and on her return

excitedly informed Abbot that he had evolved a most diabolical plot. There were sufficient quantities of explosives in storage to blast a hole through the wall of the caves, letting in the sea and killing everyone in the city. Dolf planned to set this off with a time fuse, upon the departure of the expedition. Thus Thig and the people who were left behind—about two-thirds of the total population of the city—would be destroyed, and the fish would have no one to send after Dolf and his followers to dictate to them on the upper earth.

Relieved of the thraldom of the fish, Dolf could make himself Emperor of the World, and rule over the human cattle, with Milli at his side as Empress. An alluring program—from Dolf's point of view.

"I DIDN'T expect such treason even from Dolf!" exclaimed the young American. "We must tell Thig!"

"What good would that do?" remonstrated the girl. "If you failed to convince Thig, Dolf would make an end of us both. And if you convinced Thig, it would mean the end of Dolf, whose influence is all that keeps me alive. We must think of something else."

"Right, as always," replied Abbot.

A growl came from the doorway. It was Dolf, his bearded face black with wrath.

"So?" he sputtered. "Treachery, eh?"

He whistled twice and two guards appeared.

"Take them to the prison!" he raged, indicating Abbot and Milli. "Our expedition will have to do without a guide. I have learned enough of the American language to make a good start, and I guess I can pick up another guide when we reach the surface." Then, bending close to the frightened girl, he whispered, "And another Empress."

The guards hustled them away and locked them up. As an added precaution, a sentinel was posted in front of each cell door.

Abbot immediately got busy.

"Can you get word for me at once to Thig?" he whispered to the man on guard.

"Perhaps," replied that individual non-committally.

"Then tell him," said Abbot, "that I have proof that Dolf is planning to destroy this city behind him, and never return from the surface."

The sentry became immediately agitated.

"So you know this?" he exclaimed. "How did it leak out? But—through Milli, of course. And the guard on her cell is not a member of the expedition! Curses! I must get word to Dolf, and have that guard changed at once."

And he darted swiftly away.

THE young prisoner was plunged into gloom. Now he'd gone and done it! Why hadn't he first made appropriate inquiries of his guard?

A new guard appeared in front of the door.

"Are you going on the expedition?" asked Abbot.

"Yes, worse luck," replied the guard.

The prisoner forgot his own gloom, in his surprise at the gloominess of the other.

"Don't you want to go?" he exclaimed incredulously.

"No."

"Why not?"

"Do you know Romehl?" asked the guard.

"Yes," Abbot replied.

"Well, that's why."

"Then you must be Hakin!" exclaimed Abbot, with sudden understanding.

"Yes," replied the other dully.

"You are going on the expedition, and Romehl is not?"

"Quite correct."

"Say, look here!" exclaimed Abbot, and then he launched into the description of a plan, which just that moment had occurred to him, for him, Milli, Romehl and Hakin to make their getaway ahead of the expedition—in fact, that very night—and to set off the time-fuse before leaving.

It turned out that Hakin knew where the explosives were planted, and where the submarines were kept, and even how to operate them. He eagerly accepted the plan; and when next relieved as sentinel, he hurried away to inform Romehl.

Three hours later he was back on post. Quickly he explained to his prisoner all about the workings of the submarines of the expedition. The lights-out bell rang, and all the city became dark, except for dim lights in the passageways. Hakin at once unlocked the door of Abbot's cell, and together the two young men sneaked down the corridor to the cell where Milli was confined.

Silently Hakin and Abbot sprang upon the guard and throttled him; then released Milli. There was no time for more than a few hurried words of explanation before the three of them left the prison and made for the locks of the subterranean canal, picking up Romehl at a preappointed spot on the way.

THE canal locks were unguarded, as well as the storerooms of the submarines. Each of the rooms held two subs, and could open onto the second lock and be separately flooded.

The submarines were of steel as thick as Abbot's bathysphere. Their shape was that of an elongated rain drop, with fins. In the pointed tip of their tails were motors which could operate at any pressure. At the front end were quartz windows. In the top fin was an expanding device which could be filled with buoyant gas, produced by chemicals, when the craft neared the surface. Each submarine also contained a radio set, so tuned as to be capable of opening and closing the radio-controlled gates of the locks. Each would carry comfortably two or three persons.

Having picked out two submarines and found them to be in order, Hakin sneaked back into the corridor to set off the time-fuse, leaving his three companions in the dark in the storeroom. Abbot put a protecting arm around Milli, while Romehl snuggled close to her other side.

Their hearts were all racing madly with excitement, and this was intensified when they heard Hakin talking with someone just outside their door.

Then Hakin returned unexpectedly.

"Something terrible has happened!" he breathed. "The explosives have been discovered and are gone. One of the expedition men has just informed me. Someone must have gotten word to Thig—"

"Why, *I* did," interrupted Milli. "I told my guard, just before they came and changed him."

Abbot groaned.

Hakin continued hurriedly: "So Dolf plans to leave at once. He is already rounding up his followers. Come on! We must get out ahead of him!"

An uproar could be heard drawing near in the corridor outside. Abbot opened the door and peered out; then shut it again and whispered, "The two factions are fighting already."

"Then come on!" exclaimed Hakin.

AS he spoke he turned on the lights, wedged the door tight against its gaskets and threw the switch which started the water seeping into the storeroom; then he led Romehl hurriedly to one of the two submarines, while George and Milli rushed to the other. Heavy blows sounded against the storeroom door.

The water rapidly rose about them,

and the four friends crawled inside the two machines and clamped the lids tight. Then they waited for sufficient depth, so that they could get under way.

The water rose above their bow windows, but suddenly and inexplicably it began to subside again. A man waded by around the bow of Abbot's machine.

"They've crashed in the door, and are pumping out the water again!" exclaimed Abbot. "We're trapped!"

"Not yet!" grimly replied the girl at his side. "Can you work the radio door controls?"

"Yes."

"Then quick! Open the doors into the lock!"

He pressed a button. Ahead of them two gates swung inward, followed by a deluge of water.

"Come on!" spoke the girl. "Full speed ahead, before the water gets too low."

Abbot did so. Out into the lock they sped, in the face of the surging current. Then Abbot pushed another button to close the gates behind them. But the water continued to fall, and they grounded before they reached the end of the lock. Quite evidently the rush of the current had kept the doors from closing behind them. The city was being flooded through the broken door of the storeroom.

But Abbot opened the next gates, and again they breasted the incoming torrent. This time, although the level continued to fall, their craft did not quite ground.

"They must have got the gates shut behind us at last," said he, as he opened the next set and pressed on.

AND then he had an idea. Why not omit to close any further gates behind him? As a result, the sea pressure would eventually break down the inmost barriers, and destroy the city as effectively as Dolf's bomb would have done. But he said nothing to Milli of this plan: she might wish to save her people.

Gate after gate they passed. This was too simple. A few more locks and they would be out in open water. The submarine of Hakin and Romehl swept by—evidently to let George and Milli know their presence—and then dropped behind again. But was it their two friends after all? It might have been some enemy! They could not be sure.

This uncertainty cast a chill of apprehension over them, which was immediately heightened by the sudden extinguishing of the overhead lights of the tunnel. Abbot pressed the radio button for the next set of locks, but they did not budge.

"What can be the matter?" he asked frantically.

"My people must have turned off the electric current," Milli replied. "The gates won't open without electricity to feed the motors. We're trapped again."

For a moment they lay stunned by a realization that their escape was blocked.

"Kiss me good-by, dear," breathed Milli. "This is the end."

As the young man reached over to take her in his arms, the submarine was suddenly lifted up and spun backward, end over end; then tumbled and bumped along, as though it were a chip on an angry mountain torrent.

Stunned and bruised and bleeding, the young American finally lost consciousness. . . .

WHEN he came to his senses again, his first words were, "Milli, where are you?"

"My darling!" breathed a voice at his side. "Are you all right?"

"Yes," he replied. "Where are we? What has happened?"

"The entire system of locks must have crashed in and flooded the city," said she.

Instantly Abbott's mind grasped

the explanation of this occurrence: their leaving open so many gates behind them had made it impossible for the few remaining gates ahead to withstand the terrific pressures of the ocean depths, and they had crumpled. But he did not tell Milli his part in this.

She continued, "I was pretty badly shaken up myself, but I've got this boat going again, and we're on our way out of the tunnel. See—I've found out how to work our searchlight."

He looked. A broad beam of light from their bow, illuminated the tunnel ahead of them.

Presently another beam appeared, shooting by them from behind.

"Hakin and Romehl!" exclaimed the girl. "Then they're safe, too!"

The tunnel walls grew rough, then disappeared. They were out in the open sea at last, although still one mile beneath the surface.

But in front of them was an angry seething school of the man-sharks, clearly illumined by the two rays of light. Behind the sharks were a score or more of serpentine steeds.

The sharks saw the two submarines and charged down upon them; but Milli, with great presence of mind, shut off her searchlight and swung sharply to the left.

"Up! Up!" urged the young man, so she turned the craft upward.

ON and on they went, with no interference. Presently they turned the light on again, so as to see what progress they were making. But they were making absolutely none! They were merely standing on their tail. They had reached a height of such relatively low pressure that it took all the churning of their propeller just merely to counteract the great weight of their submarine.

Abbot switched on their chemical gas supply, and as their top fin expanded into a ballon they again began to rise.

One thing, however, perplexed the young man: the water about him seemed jet black, rather than blue. They must by now be close to the surface of the sea, where at least a twilight blue should be visible. Even at the one mile depth in his bathysphere, the water had been brilliant, yet here, almost at the surface, he could see absolutely nothing.

He switched on the searchlight again to make sure that their window wasn't clouded over; but it wasn't.

Then suddenly a rippling veil of pale silver appeared ahead; then a blue-black sky and twinkling stars. They had reached the surface, and it was night.

He pointed out the stars to the girl at his side, then swung the nose of the submarine around and showed her the moon.

Where next? George Abbot picked out his position by the stars and headed east. East across the Pacific toward America.

BUT soon he noticed that their little craft was dropping beneath the surface. He kept heading up more and more; he threw the lever for more and more chemical gas; yet still they continued to sink.

"Milli!" he exclaimed, "we've got to get out of here!"

She clutched him in fear, for to her the pressure of the open sea meant death, certain death. But he pushed her firmly away, and unclamped the lid of the submarine. In another instant he had hauled her out and was battling his way to the surface, while their little boat sunk slowly beneath them.

Milli was an experienced swimmer, for the undersea folk enjoyed the privilege of a large indoor pool. As soon as she found that the open sea did not kill her, she became calm.

Side by side they floated in the moonlight. The sky began to pink in the east. Dawn came, the first

dawn that Milli had ever seen.

Suddenly she called George's attention to two bobbing heads some distance away in the path of light the rising sun made on the ocean.

"Hakin and Romehl!" he exclaimed. Long since they had given them up for dead; but evidently fate had treated them in much the same way as themselves.

And a moment later his own salt-stung eyes noticed a long gray shape to one side.

As the day brightened, Abbot suddenly noticed a large bulking shape nearby.

It was his own boat!—the one which had lowered him into the depths in his bathysphere so many weeks and weeks ago! Evidently it was still sticking around, grappling for his long dead body.

"Come on, dear," said he, and side by side they swam over to it.

He helped her up the ship's ladder. The ship's cook sleepily stuck his head out of the galley door.

"Hullo, Mike," sang out George Abbot merrily to the astonished man. "I've brought company for breakfast. And there'll be two more when we can lower a boat!"

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A Splendid Story of Interplanetary Space

By Edmond Hamilton

THE COPPER-CLAD WORLD

A Complete Novelette of Adventure on the Second Satellite of Jupiter

By Harl Vincent

BROOD OF THE DARK MOON

Part Two of the Thrilling Current Novel

By Charles Willard Diffin

—Others, of Course

AND THERE WILL BE AN ANNOUNCEMENT OF GREATEST INTEREST AND IMPORTANCE TO EVERYONE!

Brood of the Dark Moon

(A Sequel to "Dark Moon")

BEGINNING A FOUR-PART NOVEL

By Charles Willard Diffin

CHAPTER I

The Message

IN a hospital in Vienna, in a room where sunlight flooded through ultra-violet permeable crystal, the warm rays struck upon smooth walls the color of which changed from hot reds to cool yellow or gray or to soothing green, as the Directing Surgeon might order. An elusive blending of tones now seemed pulsing with life; surely even a flickering flame of vitality would be blown into warm livingness in such a place.

Once more Chet, Walt and Diane are united in a wild ride to the Dark Moon—but this time they go as prisoners of their deadly enemy Schwartzmann.

He landed one blow on the nearest face.

Even the chart case in the wall glittered with the same clean, brilliant hues from its glass and metal door. The usual revolving paper disks showed white beyond the glass. They were moving; and the ink lines grew to tell a story of temperature and respiration and of every heart-beat.

On the identification-plate a name appeared and a date: "Chet Bullard —23 years. Admitted: August 10, 1973." And below that the ever-changing present ticked into the past in silent minutes: "August 15, 1973; World Standard Time: 10:38 —10:39—10:40—"

For five days the minutes had trickled into a rivulet of time that flowed past a bandaged figure in the bed below—a silent figure and unmoving, as one for whom time has ceased. But the surgeons of the Allied Hospital at Vienna are clever.

10:41—10:42— The bandaged figure stirred uneasily on a snow-white bed. . . .

A NURSE was beside him in an instant. Was her patient about to recover consciousness? She examined the bandages that covered a ragged wound in his side, where all seemed satisfactory To all appearances the man who had moved was unconscious still; the nurse could not know of the thought im-

pressions, blurred at first, then gradually clearing, that were flashing through his mind.

Flashing; yet, to the man who struggled to comprehend them, they passed laggingly in review: one picture followed another with exasperating slowness. . . .

Where was he? What had happened? He was hardly conscious of his own identity. . . .

There was a ship . . . he held the controls . . . they were flying low. . . . One hand reached fumblingly beneath the soft coverlet to search for a triple star that should be upon his jacket. A triple star: the insignia of a Master Pilot of the World!—and with the movement there came clearly a realization of himself.

Chet Bullard, Master Pilot; he was Chet Bullard . . . and a wall of water was sweeping under him from the ocean to wipe out the great Harkness Terminal buildings. . It was Harkness—Walt Harkness—from whom he had snatched the controls. . . To fly to the Dark Moon, of course—

What nonsense was that? . No, it was true; the Dark Moon had raised the devil with things on Earth. . How slowly the thoughts came! Why couldn't he remember? .

Dark Moon!—and they were flying through space. . They had conquered space; they were landing on the Dark Moon that was brilliantly alight. Walt Harkness had set the ship down beautifully—

THEN, crowding upon one another in breath-taking haste, came clear recollection of past adventures:

They were upon the Dark Moon—and there was the girl, Diane. They must save Diane. Harkness had gone for the ship. A savage, half-human shape was raising a hairy arm to drive a spear toward Diane, and he, Chet, was leaping before her. He felt again the lancet-pain of that blade. .

And now he was dying—yes, he remembered it now—dying in the night on a great, sweeping surface of frozen lava. . . It was only a moment before that he had opened his eyes to see Harkness' strained face and the agonized look of Diane as the two leaned above him. . . . But now he felt stronger. He must see them again.

He opened his eyes for another look at his companions—and, instead of black, star-pricked night on a distant globe, there was dazzling sunlight. No desolate lava-flow, this; no thousand fires that flared and smoked from their fumeroles in the dark. And, instead of Harkness and the girl, Diane, leaning over him there was a nurse who laid one cool hand upon his blond head and who spoke soothingly to him of keeping quiet. He was to take it easy—he would understand later—and everything was all right. . . . And with this assurance Chet Bullard drifted again into sleep.

THE blurring memories had lost their distortions a week later, as he sat before a broad window in his room and looked out over the housetops of Vienna. Again he was himself, Chet Bullard, with a Master Pilot's rating; and he let his eyes follow understandingly the moving picture of the world outside. It was good to be part of a world whose every movement he understood.

Those cylinders with stubby wings that crossed and recrossed the sky; their sterns showed a jet of thin vapor where a continuous explosion of detonite threw them through the air. He knew them all: the pleasure craft, the big, red-bellied freighters, the sleek liners, whose multiple helicopters spun dazzlingly above

as they sank down through the shaft of pale-green light that marked a descending area.

That one would be the China Mail. Her under-ports were open before the hold-down clamps had gripped her; the mail would pour out in an avalanche of pouches where smaller mailships waited to distribute the cargo across the land.

And the big fellow taking off, her hull banded with blue, was one of Schwartzmann's liners. He wondered what had become of Schwartzmann, the man who had tried to rob Harkness of his ship; who had brought the patrol ships upon them in an effort to prevent their take-off on that wild trip.

For that matter, what had become of Harkness? Chet Bullard was seriously disturbed at the absence of any word beyond the one message that had been waiting for him when he regained consciousness. He drew that message from a pocket of his dressing gown and read it again:

"Chet, old fellow, lie low. S has vanished. Means mischief. Think best not to see you or reveal your whereabouts until our position firmly established. Have concealed ship. Remember, S will stop at nothing. Trying to discredit us, but the gas I brought will fix all that. Get yourself well. We are planning to go back, of course. Walt."

Chet returned the folded message to his pocket. He arose and walked about the room to test his returning strength; to remain idle was becoming increasingly difficult. He wanted to see Walter Harkness, talk with him, plan for their return to the wonder-world they had found.

INSTEAD he dropped again into his chair and touched a knob on the newscaster beside him. A voice, hushed to the requirements of these hospital precincts spoke softly of market quotations in the far corners of the earth. He turned the dial irritably and set it on "World News—General." The name of Harkness came from the instrument to focus Chet's attention.

"Harkness makes broad claims," the voice was saying. "Vienna physicists ridicule his pretensions.

"Walter Harkness, formerly of New York, proprietor of Harkness Terminals, whose great buildings near New York were destroyed in the Dark Moon wave, claims to have reached and returned from the Dark Moon.

"Nearly two months have passed since the new satellite crashed into the gravitational field of Earth, its coming manifested by earth shocks and a great tidal wave. The globe, as we know, was invisible. Although still unseen, and only a black circle that blocks out distant stars, it is visible in the telescopes of the astronomers; its distance and its orbital motion have been determined.

"And now this New Yorker claims to have pentrated space; to have landed on the Dark Moon; and to have returned to Earth. Broad claims, indeed, especially so in view of the fact that Harkness refuses to submit his ship for examination by the Stratosphere Control Board. He has filed notice of ownership, thus introducing some novel legal technicalities, but, since space-travel is still a dream of the future, there will be none to dispute his claims.

"Of immediate interest is Harkness' claim to have discovered a gas that is fatal to the serpents of space. The monsters that appeared when the Dark Moon came and that attacked ships above the Repelling Area are still there. All flying is confined to the lower levels; fast world-routes are disorganized.

"Whether or not this gas, of which Harkness has a sample, came from the Dark Moon or from some laboratory on Earth is of no particular importance. Will it destroy the space-serpents? If it does this, our hats are off to Mr. Walter Harkness; almost will we be inclined to believe the rest of his story—or to laugh with him over one of the greatest hoaxes ever attempted."

Chet had been too intent upon the newscast to heed an opening door at his back. . . .

"HOW about it, Chet?" a voice was asking. "Would you call it a hoax or the real thing?" And a girl's voice chimed in with exclamations of delight at sight of the patient, so evidently recovering.

"Diane!" Chet exulted, "—and Walt!—you old son-of-a-gun!" He found himself clinging to a girl's soft hand with one of his, while with the other he reached for that of her companion. But Walt Harkness' arm went about his shoulders instead.

"I'd like to hammer you plenty," Harkness was saying, "and I don't even dare give you a friendly slam on the back. How's the side where they got you with the spear?—and how are you? How soon will you be ready to start back? What about—"

Diane Delacouer raised her one free hand to stop the flood of questions. "My dear," she protested, "give Chet a chance. He must be dying for information."

"I was dying for another reason the last time I saw you," Chet reminded her, "—up on the Dark Moon. But it seems that you got me back here in time for repairs. And now what?" His nurse came into the room with extra chairs; Chet waited till she was gone before he repeated: "Now what? When do we go back?"

Harkness did not answer at once. Instead he crossed to the newscaster in its compact, metal case. The voice was still speaking softly; at a touch of a switch it ceased, and in the silence came the soft rush of sound that meant the telautotype had taken up its work. Beneath a glass a paper moved, and words came upon it from a hurricane of type-bars underneath. The instrument was printing the news story as rapidly as any voice could speak it.

Harkness read the words for an instant, then let the paper pass on to wind itself upon a spool. It had still been telling of the gigantic hoax that this eccentric American had attempted and Harkness repeated the words.

"A hoax!" he exclaimed, and his eyes, for a moment, flashed angrily beneath the dark hair that one hand had disarranged. "I would like to take that facetious bird out about a thousand miles and let him play around with the serpents we met. But, why get excited? This is all Schwartzmann's doing. The tentacles of that man's influence reach out like those of an octopus."

CHET ranged himself alongside. Tall and slim and blond, he contrasted strongly with this other man, particularly in his own quiet self-control as against Harkness' quick-flaring anger.

"Take it easy, Walt," he advised. "We'll show them. But I judge that you have been razzed a bit. It's a pretty big story for them to swallow without proof. Why didn't you show them the ship? Or why didn't you let Diane and me back up your yarn? And you haven't answered my other questions: when do we go back?"

Harkness took the queries in turn.

"I didn't show the old boat," he explained, "because I'm not ready

for that yet. I want it kept dark—dark as the Dark Moon. I want to do my preliminary work there before Schwartzmann and his experts see our ship. He would duplicate it in a hurry and be on our trail.

"And now for our plans. Well, out there in space the Dark Moon is waiting. Have you realized, Chet, that we own that world—you and Diane and I? Small—only half the size of our old moon—but what a place! And it's ours!

"Back in history—you remember?—an ambitious lad named Alexander sighed for more worlds to conquer. Well, we're going Alexander one better—we've found the world. We're the first ever to go out into space and return again.

"We'll go back there, the three of us. We will take no others along—not yet. We will explore and make our plans for development; and we will keep it to ourselves until we are ready to hold it against any opposition.

"And now, how soon can you go? Your injury—how soon will you be well enough?"

"Right now," Chet told him laconically; "to-day, if you say the word. They've got me welded together so I'll hold, I reckon. But where's the ship? What have you done—" He broke off abruptly to listen—

TO all three came a muffled, booming roar. The windows beside them shivered with the thud of the distant explosion; they had not ceased their trembling before Harkness had switched on the news broadcast. And it was a minute only until the news-gathering system was on the air.

"Explosion at the Institute of Physical Science!" it stated. "This is Vienna broadcasting. An explosion has just occurred. We are giving a preliminary announcement only. The laboratories of the Scientific Institute of this city are destroyed. A number of lives have been lost. The cause has not been determined. It is reported that the laboratories were beginning analytical work on the so-called Harkness Dark Moon gas—

"Confirmation has just been radioed to this station. Dark Moon gas exploded on contact with air. The American, Harkness, is either a criminal or a madman; he will be apprehended at once. This confirmation comes from Herr Schwartzmann of Vienna who left the Institute only a few minutes before the explosion occurred—"

And, in the quiet of a hospital room, Walter Harkness drew a long breath and whispered: "Schwartzmann! His hand is everywhere. . . . And that sample was all I had. . . . I must leave at once—go back to America."

He was halfway to the door—he was almost carrying Diane Delacouer with him—when Chet's quiet tones brought him up short.

"I've never seen you afraid," said Chet; and his eyes were regarding the other man curiously; "but you seem to have the wind up, as the old flyers used to say, when it comes to Schwartzmann."

HARKNESS looked at the girl he held so tightly, then grinned boyishly at Chet. "I've someone else to be afraid for now," he said.

His smile faded and was replaced by a look of deep concern. "I haven't told you about Schwartzmann," he said; "haven't had time. But he's poison, Chet. And he's after our ship."

"Where is the ship; where have you hidden it? Tell me—where?"

Harkness looked about him before he whispered sharply: "Our old shop—up north!"

He seemed to feel that some explanation was due Chet. "In this

day it seems absurd to say such things," he added; "but this Schwartzmann is a throw-back—a conscienceless scoundrel. He would put all three of us out of the way in a minute if he could get the ship. *He* knows we have been to the Dark Moon—no question about that—and he wants the wealth he can imagine is there.

"We'll all plan to leave; I'll radio you later. We'll go back to the Dark Moon—" He broke off abruptly as the door opened to admit the nurse. "You'll hear from me later," he repeated; and hurried Diane Delacouer from the room.

But he returned in a moment to stand again at the door—the nurse was still in the room. "In case you feel like going for a hop," he told Chet casually, "Diane's leaving her ship here for you. You'll find it up above—private landing stage on the roof."

Chet answered promptly, "Fine; that will go good one of these days." All this for the benefit of listening ears. Yet even Chet would have been astonished to know that he would be using that ship within an hour. . . .

HE was standing at the window, and his mind was filled, not with thoughts of any complications that had developed for his friend Harkness, but only of the adventures that lay ahead of them both. The Dark Moon!—they had reached it, indeed; but they had barely scratched the surface of that world of mystery and adventure. He was wild with eagerness to return—to see again that new world, blazing brightly beneath the sun; to see the valley of fires—and he had a score to settle with the tribe of ape-men, unless Harkness had finished them off while he, himself, lay unconscious. . . . Yes, there seemed little doubt of that; Walt would have paid the score for all of them. . . . He seemed actually back in that world to which his thoughts went winging across the depths of space. The buzz of a telephone recalled him.

It was the hospital office, he found, when he answered. There was a message—would Mr. Bullard kindly receive it on the telautotype—lever number four, and dial fifteen-point-two—thanks. . . . And Chet depressed a key and adjusted the instrument that had been printing the newscast.

The paper moved on beneath the glass, and the type-bars clicked more slowly now. From some distant station that might be anywhere on or above the earth, there was coming a message.

The frequency of that sending current was changed at some central office; it was stepped down to suit the instrument beside him. And the type was spelling out words that made the watching man breathless and intent—until he tore off the paper and leaped for the call signal that would summon the nurse. Through her he would get his own clothes, his uniform, the triple star that showed his rating and his authority in every air-level of the world.

That badge would have got him immediate attention on any landing field. Now, on the flat roof, with steady, gray eyes and a voice whose very quietness accentuated its imperative commands, Chet had the staff of the hospital hangars as alert as if their alarm had sounded a general ambulance call.

STRAIGHT into the sky a red beacon made a rigid column of light; a radio sender was crackling a warning and a demand for "clear air." From the forty level, a patrol ship that had caught the signal came corkscrewing down the red shaft to stand by for emergency work. . . . Chet called her com-

mander from the cabin of Diane's ship. A word of thanks—Chet's number—and a dismissal of the craft. Then the white lights signaled "all clear" and the hold-down levers let go with a soft hiss—

The feel of the controls was good to his hands; the ship roared into life. A beautiful little cruiser, this ship of Diane's; her twin helicopters lifted her gracefully into the air. The column of red light had changed to blue, the mark of an ascending area; Chet touched a switch. A muffled roar came from the stern and the blast drove him straight out for a mile; then he swung and returned. He was nosing up as he touched the blue—straight up—and he held the vertical climb till the altimeter before him registered sixty thousand.

Traffic is north-bound only on the sixty level, and Chet set his ship on a course for the frozen wastes of the Arctic; then he gave her the gun and nodded in tight-lipped satisfaction at the mounting thunder that answered from the stern.

Only then did he read again the message on a torn fragment of telautotype paper. "Harkness," was the signature; and above, a brief warning and a call— "Danger—must leave at once. You get ship and stand by. I will meet you there." And, for the first time, Chet found time to wonder at this danger that had set the hard-headed, hard-hitting Walt Harkness into a flutter of nerves.

WHAT danger could there be in this well-guarded world? A patrol-ship passed below him as he asked himself the question. It was symbolic of a world at peace; a world too busy with its own tremendous development to find time for wars or makers of war. What trouble could this man Schwartzmann threaten that a word to the Peace Enforcement Commission would not quell? Where could he go to elude the inescapable patrols?

And suddenly Chet saw the answer to that question—saw plainly where Schwartzmann could go. Those vast reaches of black space! If Schwartzmann had their ship he could go where they had gone—go out to the Dark Moon. . . . And Harkness had warned Chet to get their ship and stand by.

Had Walt learned of some plan of Schwartzmann's? Chet could not answer the question, but he moved the control rheostat over to the last notch.

From the body of the craft came an unending roar of a generator where nothing moved; where only the terrific, explosive impact of bursting detonite drove out from the stern to throw them forward. "A good little ship," Chet had said of this cruiser of Diane's; and he nodded approval now of a ground-speed detector whose quivering needle had left the 500 mark. It touched 600, crept on, and trembled at 700 miles an hour with the top speed of the ship.

There was a position-finder in the little control-room, and Chet's gaze returned to it often to see the pinpoint of light that crept slowly across the surface of a globe. It marked their ever-changing location, and it moved unerringly toward a predetermined goal.

IT was a place of ice and snow and bleak outcropping of half-covered rocks where he descended. Lost from the world, a place where even the high levels seldom echoed to the roar of passing ships, it had been a perfect location for their "shop." Here he and Walt had assembled their mystery ship.

He had to search intently over the icy waste to find the exact location; a dim red glow from a

hidden sun shone like pale fire across distant black hills. But the hills gave him a bearing, and he landed at last beside a vaguely outlined structure, half hidden in drifting snow.

The dual fans dropped him softly upon the snow ground and Chet, as he walked toward the great locked doors, was trembling from other causes than the cold. Would the ship be there? He was suddenly a-quiver with excitement at the thought of what this ship meant—the adventure, the exploration that lay ahead.

The doors swung back. In the warm and lighted room was a cylinder of silvery white. Its bow ended in a gaping port where a mighty exhaust could roar forth to check the ship's forward speed; there were other ports ranged about the gleaming body. Above the hull a control-room projected flatly; its lookouts shone in the brilliance of the nitron illuminator that flooded the room with light. . . .

Chet Bullard was breathless as he moved on and into the room. His wild experiences that had seemed but a weird dream were real again. The Dark Moon was real! And they would be going back to it!

THE muffled beating of great helicopters was sounding in his ears; outside, a ship was landing. This would be Harkness coming to join him; yet, even as the thought flashed through his mind, it was countered by a quick denial. To the experienced hearing of the Master Pilot this sound of many fans meant no little craft. It was a big ship that was landing, and it was coming down fast. The blue-striped monster looming large in the glow of the midnight sun was not entirely a surprise to Chet's staring eyes.

But—blue-striped! The markings of the Schwartzmann line!— He had hardly sensed the danger when it was upon him.

A man, heavy and broad of frame, was giving orders. Only once had Chet seen this Herr Schwartzmann, but there was no mistaking him now. And he was sending a squad of rushing figures toward the man who struggled to close a great door.

Chet crouched to meet the attack. He was outnumbered; he could never win out. But the knowledge of his own helplessness was nothing beside that other conviction that flooded him with sickening certainty—

A hoax!—that was what they had called Walt's story; Schwartzmann had so named it, and now Schwartzmann had been the one to fool them; the message was a fake—a bait to draw him out; and he, Chet, had taken the bait. He had led Schwartzmann here; had delivered their ship into his hands—

He landed one blow on the nearest face; he had one glimpse of a clubbed weapon swinging above him—and the world went dark.

CHAPTER II

Into Space

A PULSING pain that stabbed through his head was Chet's first conscious impression. Then, as objects came slowly into focus before his eyes, he knew that above him a ray of light was striking slantingly through the thick glass of a control-room lookout.

Other lookouts were black, the dead black of empty space. Through them, sparkling points of fire showed here and there—suns, sending their light across millions of years to strike at last on a speeding ship. But, from the one port that caught the brighter light, came that straight ray to illumine the room.

"Space," thought Chet vaguely. "That is the sunlight of space!"

He was trying to arrange his thoughts in some sensible sequence. His head!—what had happened to his head? . . . And then he remembered. Again he saw a clubbed weapon descending, while the face of Schwartzmann stared at him through bulbous eyes. . . .

And this control-room where he lay—he knew in an instant where he was. It was his own ship that was roaring and trembling beneath him—his and Walt Harkness'—it was flying through space! And, with the sudden realization of what this meant, he struggled to arise. Only then did he see the figure at the controls.

The man was leaning above an instrument board; he straightened to stare from a rear port while he spoke to someone Chet could not see.

"There's more of 'em coming!" he said in a choked voice. "*Mein Gott!* Neffer can we get away!"

HE fumbled with shaking hands at instruments and controls; and now Chet saw his chalk-white face and read plainly the terror that was written there. But the cords that cut into his own wrists and ankles reminded him that he was bound; he settled back upon the floor. Why struggle? If this other pilot was having trouble let him get out of it by himself—let him kill his own snakes!

That the man was having trouble there was no doubt. He looked once more behind him as if at something that pursued; then swung the ball-control to throw the ship off her course.

The craft answered sluggishly, and Chet Bullard grinned where he lay helpless upon the floor; for he knew that his ship should have been thrown crashingly aside with such a motion as that. The answer was plain: the flask of super-detonite was exhausted; here was the last feeble explosion of the final atoms of the terrible explosive that was being admitted to the generator. And to cut in another flask meant the opening of a hidden valve.

Chet forgot the pain of his swelling hands to shake with suppressed mirth. This was going to be good! He forgot it until, through a lookout, he saw a writhing, circling fire that wrapped itself about the ship and jarred them to a halt.

The serpents!—those h o r r o r s from space that had come with the coming of the Dark Moon! They had disrupted the high-level traffic of the world; had seized great liners; torn their way in; stripped them of every living thing, and let the empty shells crash back to earth. Chet had forgotten or he had failed to realize the height at which this new pilot was flying. Only speed could save them; the monsters, with their snouts that were great suction-cups, could wrench off a metal door—tear out the glass from a port!

HE saw the luminous mass crush itself against a forward lookout and felt the jar of its body against their ship. Soft and vaporous, these cloud-like serpents seemed as they drifted through space; yet the impact, when they struck, proved that this new matter had mass.

Chet saw the figure at the controls stagger back and cower in fear; the man's bullet-shaped head was covered by his upraised arms: there was some horror outside those windows that his eyes had no wish to see. Beside him the towering figure of Schwartzmann appeared; he had sprung into Chet's view, and he screamed orders at the fear-stricken pilot.

"Fool! Swine!" Schwartzmann

was shouting. "Do something! You said you could fly this ship!" In desperation he leaped forward and reached for the controls himself.

Chet's blurred faculties snapped sharply to attention. That yellow glow against the port—the jarring of their ship—it meant instant destruction once that searching snout found some place where it could secure a hold. If the air-pressure within the ship were released; if even a crack were opened!—

"Here, you!" he shouted to the frantic Schwartzmann who was jerking frenziedly at the controls that no longer gave response. "Cut these ropes!—leave those instruments alone, you fool!" He was suddenly vibrant with hate as he realized what this man had done: he had struck him, Chet, down as he would have felled an animal for butchery; he had stolen their ship; and now he was losing it. Chet hardly thought of his own desperate plight in his rage at this threat to their ship, and at Schwartzmann's inability to help himself.

"Cut these ropes!" he repeated. "Damn it all, turn me loose; I can fly us out!" He added his frank opinion of Schwartzmann and all his men. And Schwartzmann, though his dark face flushed angrily red for one instant, leaped to Chet's side and slashed at the cords with a knife.

The room swam before Chet's dizzy eyes as he came to his feet. He half fell, half drew himself full length toward the valve that he alone knew. Then again he was on his feet, and he gripped at the ball-control with one hand while he opened a master throttle that cut in this new supply of explosive.

THE room had been silent with the silence of empty space, save only for the scraping of a horrid body across the ship's outer shell. The silence was shattered now as if by the thunder of many guns. There was no time for easing themselves into gradual flight. Chet thrust forward on the ball-control, and the blast from their stern threw the ship as if it had been fired from a giant cannon.

The self-compensating floor swung back and up; Chet's weight was almost unbearable as the ship beneath him leaped out and on, and the terrific blast that screamed and thundered urged this speeding shell to greater and still greater speed. And then, with the facility that that speed gave, Chet's careful hands moved a tiny metal ball within its magnetic cage, and the great ship bellowed from many ports as it followed the motion of that ball.

Could an eye have seen the wild, twisting flight, it must have seemed as if pilot and ship had gone suddenly mad. The craft corkscrewed and whirled; it leaped upward and aside; and, as the glowing mass was thrown clear of the lookout, Chet's hand moved again to that maximum forward position, and again the titanic blast from astern drove them on and out.

There were other shapes ahead, glowing lines of fire, luminous masses like streamers of cloud that looped themselves into contorted forms and writhed vividly until they straightened into sharp lines of speed that bore down upon the fleeing craft and the human food that was escaping these hungry snouts.

Chet saw them dead ahead; he saw the out-thrust heads, each ending in a great suction-cup, the row of disks that were eyes blazing above, and the gaping maw below. He altered their course not a hair's breadth as he bore down upon them, while the monsters swelled prodigiously before his eyes. And the thunderous roar from astern came with never a break, while the ship itself ceased its trembling protest

against the sudden blast and drove smoothly on and into the waiting beasts.

There was a hardly perceptible thudding jar. They were free! And the forward lookouts showed only the brilliant fires of distant suns and one more glorious than the rest that meant a planet.

CHET turned at last to face Schwartzmann and his pilot where they had clung helplessly to a metal stanchion. Four or five others crept in from the cabin aft; their blanched faces told of the fear that had gripped them—fear of the serpents; fear, too, of the terrific plunges into which the ship had been thrown. Chet Bullard drew the metal control-ball back into neutral and permitted himself the luxury of a laugh.

"You're a fine bunch of highwaymen," he told Schwartzmann; "you'll steal a ship you can't fly; then come up here above the R. A. level and get mixed up with those brutes. What's the idea? Did you think you would just hop over to the Dark Moon? Some little plan like that in your mind?"

Again the dark, heavy face of Schwartzmann flushed deeply; but it was his own men upon whom he turned.

"You," he told the pilot—"you were so clever; you would knock this man senseless! You would insist that you could fly the ship!"

The pilot's eyes still bulged with the fear he had just experienced. "But, Herr Schwartzmann, it was you who told me—"

A barrage of unintelligible words cut his protest short. Schwartzmann poured forth imprecations in an unknown tongue, then turned to the others.

"Back!" he ordered. "Bah!—such men! The danger it iss over—yess! This pilot, he will take us back safely."

He turned his attention now to the waiting Chet. "Herr Bullard, iss it not—yess?"

He launched into extended apologies—he had wanted a look at this so marvelous ship—he had spied upon it; he admitted it. But this murderous attack was none of his doing; his men had got out of hand; and then he had thought it best to take Chet, unconscious as he was, and return with him where he could have care.

AND Chet Bullard kept his eyes steadily upon the protesting man and said nothing, but he was thinking of a number of things. There was Walt's warning, "this Schwartzmann means mischief," and the faked message that had brought him from the hospital to get the ship from its hiding place; no, it was too much to believe. But Chet's eyes were unchanging, and he nodded shortly in agreement as the other concluded.

"You will take us back?" Schwartzmann was asking. "I will repay you well for what inconvenience we have caused. The ship, you will return it safely to the place where it was?"

And Chet, after making and discarding a score of plans, knew there was nothing else he could do. He swung the little metal ball into a sharply-banked turn. The straight ray of light from an impossibly brilliant sun struck now on a forward lookout; it shone across the shoulder of a great globe to make a white, shining crescent as of a giant moon. It was Earth; and Chet brought the bow-sights to bear on that far-off target, while again the thunderous blast was built up to drive them back along the trackless path on which they had come. But he wondered, as he pressed forward on the control, what the real plan of this man, Schwartzmann, might be. . . .

LESS than half an hour brought them to the Repelling Area, and Chet felt the upward surge as he approached it. Here, above this magnetic field where gravitation's pull was nullified, had been the airlanes for fast liners. Empty lanes they were now; for the R. A., as the flying fraternity knew it—the Heaviside Layer of an earlier day—marked the danger line above which the mysterious serpents lay in wait. Only the speed of Chet's ship saved them; more than one of the luminous monsters was in sight as he plunged through the invisible R. A. and threw on their bow-blast strongly to check their fall.

Then, as he set a course that would take them to that section of the Arctic waste where the ship had been, he pondered once more upon the subject of this Schwartzmann of the shifty eyes and the glib tongue and of his men who had "got out of hand" and had captured this ship.

"Why in thunder are we back here?" Chet asked himself in perplexity. "This big boy means to keep the ship; and, whatever his plans may have been before, he will never stop short of the Dark Moon now that he has seen the old boat perform. Then why didn't he keep on when he was started? Had the serpents frightened him back?"

He was still mentally proposing questions to which there seemed no answer when he felt the pressure of a metal tube against his back. The voice of Schwartzmann was in his ears.

"This is a detonite pistol"—that voice was no longer unctuous and self-deprecating—"one move and I'll plant a charge inside you that will smash you to a jelly!"

THERE were hands that gripped Chet before he could turn; his arms were wrenched backward; he was helpless in the grip of Schwartzmann's men. The former pilot sprang forward.

"Take control, Max!" Schwartzmann snapped; but he followed it with a question while the pilot was reaching for the ball. "You can fly it for sure, Max?"

The man called Max answered confidently.

"*Ja wohl!*" he said with eager assurance. "Up top there would have been no trouble yet for that *verdammt, verloren* valve. That one experimental trip is enough—I fly it!"

Those who held Chet were binding his wrists. He was thrown to the floor while his feet were tied, and, as a last precaution, a gag was forced into his mouth. Schwartzmann left this work to his men. He paid no attention to Chet; he was busy at the radio.

He placed the sending-levers in strange positions that would effect a blending of wave lengths which only one receiving instrument could pick up. He spoke cryptic words into the microphone, then dropped into a language that was unfamiliar to Chet. Yet, even then, it was plain that he was giving instructions, and he repeated familiar words.

"Harkness," Chet heard him say, and, "—Delacouer—*ja!*—Mam'selle Delacouer!"

Then, leaving the radio, he said, "Put my ship inside the hangar;" and the pilot, Max, grounded their own ship to allow the men to leap out and float into the big building the big aircraft in which Schwartzmann had come.

"Now close the doors!" their leader ordered. "Leave everything as it was!" And to the pilot he gave added instructions: "There iss no air traffic here. You will to forty thousand ascend, und you will wait over this spot." Contemptuously he kicked aside the legs of the bound man that he might walk back into the cabin.

THE take-off was not as smooth as it would have been had Chet's slim hands been on the controls; this burly one who handled them now was not accustomed to such sensitivity. But Chet felt the ship lift and lurch, then settle down to a swift, spiralling ascent. Now he lay still as he tried to ponder the situation.

"Now what dirty work are they up to?" he asked himself. He had seen a sullen fury on the dark face of Herr Schwartzmann as he spoke the names of Walt and Diane into the radio. Chet remembered the look now, and he struggled vainly with the cords about his wrists. Even a detonite pistol with its tiny grain of explosive in the end of each bullet would not check him—not when Walt and Diane were endangered. And the expression on that heavy, scowling face had told him all too clearly that some real danger threatened.

But the cords held fast on his swollen wrists. His head was still throbbing; and even his side, not entirely healed, was adding to the torment that beat upon him—beat and beat with his pulsing blood—until the beating faded out into unconsciousness. . . .

Dimly he knew they were soaring still higher as their radio picked up the warning of an approaching patrol ship; vaguely he realized that they descended again to a level of observation. Chet knew in some corner of his brain that Schwartzmann was watching from an under lookout with a powerful glass, and he heard his excited command:

"Down—go slowly down! . . . They are landing. . . They have entered the hangar. Now, down with it, Max! Down! down!"

THE plunging fall of the ship roused Chet from his stupor. He felt the jolt of the clumsy landing despite the snow-cushioned ground; he heard plainly the exclamations from beyond an open port—the startled oath in Walter Harkness' voice, and the stinging scorn in the words of Diane Delacouer.

Herr Schwartzmann had been in the employ of Mademoiselle Delacouer, but he was taking orders no longer. There was a sound of scuffling feet, and once the thud of a blow. . . . Then Chet watched with heavy, hopeless eyes as the familiar faces of Diane and Walt appeared in the doorway. Their hands were bound; they, too, were threatened with a slim-barreled pistol in the hands of the smirking, exultant Schwartzmann.

A tall, thin-faced man whom Chet had not seen before followed them into the room. The newcomer was motioned forward now, as Schwartzmann called an order to the pilot:

"All right; now we go, Max! Herr Doktor Kreiss will give you the bearings; he knows his way among the stars."

Herr Schwartzmann doubled over in laughing appreciation of his own success before he straightened up and regarded his captives with cold eyes.

"Such a pleasure!" he mocked; "such charming passengers to take with me on my first trip into space; this ship, it iss not so goot. I will build better ships later on; I will let you see them when I shall come to visit you."

He laughed again at sight of the wondering looks in the eyes of the three; stooping, he jerked the gag from Chet's mouth.

"You do not understand," he exclaimed, "I should haff explained. You see, *meine guten Freunde*, we go—ach!—you have guessed it already! We go to the Dark Moon. I am pleased to take you with me on the trip out; but coming back; I will have so much to bring—there will be no room for passengers.

"I could have killed you here," he said; and his mockery gave place for a moment to a savage tone, "but the patrol ships, they are everywhere. But I have influence here und there—I arranged that your flask of gas should be charged with explosive. I discredited you, and yet I could not so great a risk take as to kill you all.

"So came inspiration! I called your foolish young friend here from the hospital. I ordered him to go at once to the ship hidden where I could not find, and I signed the name of Herr Harkness."

CHET caught the silent glances of his friends who could yet smile hopefully through the other emotions that possessed them. He ground his teeth as the smooth voice of Herr Schwartzmann went on:

"He led me here; the young fool! Then I sent for you—and this time I signed his name—und you came. So simple!

"Und now we go in *my* ship to *my* new world. And," he added savagely, "if one of you makes the least trouble, he will land on the Dark Moon—yess!—but he will land hard, from ten thousand feet up!"

The great generator was roaring. To Chet came the familiar lift of the R. A. effect. They were beyond the R. A.; they were heading out and away from Earth; and his friends were captives through his own unconscious treachery, carried out into space in their own ship, with the hands of an enemy gripping the controls. . .

Chet's groan, as he turned his face away from the others who had tried to smile cheerfully, had nothing to do with the pain of his body. It was his mind that was torturing him.

But he muttered broken words as he lay there, words that had reference to one Schwartzmann. "I'll get him, damn him! I'll get him!" he was promising himself.

And Herr Schwartzmann who was clever, would have proved his cleverness still more by listening. For a Master Pilot of the World does not get his rating on vain boasts. He must know first his flying, his ships and his air—but he is apt to make good in other ways as well.

CHAPTER III

Out of Control

WALTER HARKNESS had built this ship with Chet's help. They had designed it for space-travel. It was the first ship to leave the Earth under its own power, reach another heavenly body, and come back for a safe landing. But they had not installed any luxuries for the passengers.

In the room where the three were confined, there were no self-compensating chairs such as the high-liners used. But the acceleration of the speeding ship was constant, and the rear wall became their floor where they sat or paced back and forth. Their bonds had been removed, and one of Harkness' hands was gripping Diane's where they sat side by side. Chet was briskly limbering his cramped muscles.

He glanced at the two who sat silent nearby, and he knew what was in their minds—knew that each was thinking of the other, forgetting their own danger; and it was these two who had saved his life on their first adventure out in space.

Walt—one man who was never spoiled by his millions; and Diane—straight and true as they make 'em! Some way, somehow, they must be saved—thus ran his thoughts—but it looked bad for them all. Schwartzmann?—no use kidding themselves about that lad; he was one bad hombre. The best they

could hope for was to be marooned on the Dark Moon—left there to live or to die amid those savage surroundings; and the worst that might happen—! But Chet refused to think of what alternatives might occur to the ugly, distorted mind of the man who had them at his mercy.

There was no echo of these thoughts when he spoke; the smile that flashed across his lean face brought a brief response from the despondent countenances of his companions.

"Well," Chet observed, and ran his hand through a tangle of blond hair, "I have heard that the Schwartzmann lines give service, and I reckon I heard right. Here we were wanting to go back to the Dark Moon, and,"—he paused to point toward a black portlight where occasional lights flashed past—"I'll say we're going; going somewhere at least. All I hope is that that Maxie boy doesn't find the Dark Moon at about ten thousand per. He may be a great little skipper on a nice, slow, five-hundred-maximum freighter, but not on this boat. I don't like his landings."

DIANE DELACOUER raised her eyes to smile approvingly upon him. "You're good, Chet," she said; "you are a dàrn good sport. They knock you down out of control, and you nose right back up for a forty-thousand foot zoom. And you try to carry us with you. Well, I guess it's time we got over our gloom. Now what is going to happen?"

"I'll tell you," said Walter Harkness, looking at his watch: "if that fool pilot of Schwartzmann's doesn't cut his stern thrust and build up a bow resistance, we'll overshoot our mark and go tearing on a few hundred thousand miles in space."

Diane was playing up to Chet's lead.

"Bien!" she exclaimed. "A few million, perhaps! Then we may see some of those Martians we've been speculating about. I hear they are handsome, my Walter—much better looking than you. Maybe this is all for the best after all!"

"Say," Harkness protested, "if you two idiots don't know enough to worry as you ought, I don't see any reason why I should do all the heavy worrying for the whole crowd. I guess you've got the right idea at that: take what comes when it gets here—or when we get there."

Small wonder, thought Chet, that Herr Schwartzmann stared at them in puzzled bewilderment when he flung open the door and took one long stride into the room. Stocky, heavy-muscled, he stood regarding them, a frown of suspicion drawing his face into ugly lines. Plainly he was disturbed by this laughing good-humor where he had expected misery and hopelessness and tears. He moved the muzzle of a detonite pistol back and forth.

"YOU haff been drinking!" he stated at last. "You are intoxicated—all of you!" His eyes darted searching glances about the little room that was too bare to hide any cause for inebriation.

It was Mam'selle Diane who answered him with an emphatic shake of her dark head; an engaging smile tugged at the corners of her lips. *"Mais non!* my dear Herr Schwartzmann," she assured him; "it is joy—just happiness at again approaching our Moon—and in such good company, too."

"Fortunes of war, Schwartzmann," declared Harkness; "we know how to accept them, and we don't hold it against you. We are down now, but your turn will come."

The man's reply was a sputtering of rage in words that neither Chet nor Harkness could under-

stand. The latter turned to the girl with a question.

"Did you get it, Diane? What did he say?"

"I think I would not care to translate it literally," said Diane Delacouer, twisting her soft mouth into an expression of distaste; "but, speaking generally, he disagrees with you."

Herr Schwartzmann was facing Harkness belligerently. "You think you know something! What is it?" he demanded. "You are under my feet; I kick you as I would *meinen Hund* and you can do nothing." He aimed a savage kick into the air to illustrate his meaning, and Harkness' face flushed suddenly scarlet.

WHATEVER retort was on Harkness' tongue was left unspoken; a sharp look from Chet, who brought his fingers swiftly to his lips in a gesture of silence, checked the reply. The action was almost unconscious on Chet's part; it was as unpremeditated as the sudden thought that flashed abruptly into his mind—

They were helpless; they were in this brute's power beyond the slightest doubt. Schwartzmann's words, "You know something. What is it?" had fired a swift train of thought

The idea was nebulous as yet . . . but if they could throw a scare into this man—make him think there was danger ahead. . . . Yes, that was it: make Schwartzmann think they knew of dangers that he could not avoid. They had been there before: make this man afraid to kill them. The dreadful alternative that Chet had feared to think of might be averted. . . .

All this came in an instantaneous, flashing correlation of his conscious thoughts.

"I'll tell you what we mean," he told Schwartzmann. He even leaned forward to shake an impressive finger before the other's startled face. "I'll tell you first of all that it doesn't make a damn bit of difference who is on top—or it won't in a few hours more. We'll all be washed out together.

"I've landed once on the Dark Moon; I know what will happen. And do you know how fast we are going? Do you know the Moon's speed as it approaches? Had you thought what *you* will look like when that fool pilot rams into it head on?

"And that isn't all!" He grinned derisively into Schwartzmann's flushed face, disregarding the half-raised pistol; it was as if some secret thought had filled him with overpowering amusement. His broad grin grew into a laugh. "That isn't all, big boy. What will you do if you do land? What will you do when you open the ports and the—?" He cut his words short, and the smile, with all other expression, was carefully erased from his young face.

"No, I reckon I won't spoil the surprise. We got through it all right; maybe you will, too—maybe!"

AND again it was Diane who played up to Chet's lead without a moment's hesitation.

"Chet," she demanded, "aren't you going to warn him? You would not allow him and his men to be—"

She stopped in apparent horror of the unsaid words; Chet gave her an approving glance.

"We'll see about that when we get there, Diane."

He turned abruptly back to Schwartzmann. "I'll forget what a rotten winner you have been; I'll help you out; I'll take the controls if you like. Of course, your man Max, may set us down without damage; then again—"

"Take them!" Schwartzmann ungraciously made an order of his acceptance. "Take the controls, Herr Bullard! But if you make a single

false move!" The menacing pistol completed the threat.

But "Herr Bullard" merely turned to his companion with a level, understanding look. "Come on," he said; "you can both help in working out our location."

He stepped before the burly man that Diane might precede them through the door. And he felt the hand of Walt Harkness on his arm in a pressure that told what could not be said aloud.

THERE were pallid-faced men in the cabin through which they passed; men who stared and stared from the window-ports into the black immensity of space. Chet, too, stopped to look; there had been no port-holes in that inner room where they had been confined.

He knew what to expect; he knew how awe-inspiring would be the sight of strange, luminous bodies —great islands of light—masses of animalculae—that glowed suddenly, then melted again into velvet black. A whirl of violet grew almost golden in sudden motion; Chet knew it for an invisible monster of space. Glowingly luminous as it threw itself upon a subtle mass of shimmering light, it faded like a flickering flame and went dark as its motion ceased.

Life!—life everywhere in this ocean of space! And on every hand was death. "Not surprising," Chet realized, "that these other Earthmen are awed and trembling!"

The sun was above them; its light struck squarely down through the upper ports. This was polarized light—there was nothing outside to reflect or refract it—and, coming as a straight beam from above, it made a brilliant circle upon the floor from which it was diffused throughout the room. It was as if the floor itself was the illuminating agent.

No eye could bear to look into the glare from above; nor was there need, for the other ports drew the eyes with their black depths of unplumbed space.

Black!—so velvet as to seem almost tangible! Could one have reached out a hand, that blackness, it seemed, must be a curtain that the hand could draw aside, where unflickering points of light pricked through the dark to give promise of some radiant glory beyond.

THEY had seen it before, these three, yet Chet caught the eyes of Harkness and Diane and knew that his own eyes must share something of the look he saw in theirs—something of reverent wonder and a strange humility before this evidence of trancendent greatness.

Their own immediate problem seemed gone. The tyranny of this glowering human and his men—the efforts of the whole world and its struggling millions—how absurdly unimportant it all was! How it faded to insignificance! And yet. . . .

Chet came from the reverie that held him. There was one man by whom this beauty was unseen. Herr Schwartzmann was angrily ordering them on, and, surprisingly, Chet laughed aloud.

This problem, he realized, was *his* problem—his to solve with the help of the other two. And it was *not* insignificant; he knew with some sudden wordless knowledge that there was nothing in all the great scheme but that it had its importance. This vastness that was beyond the power of human mind to grasp ceased to be formidable—he was part of it. He felt buoyed up; and he led the way confidently toward the control-room door where Schwartzmann stood.

The scientist, whom Schwartzmann had called Herr Doktor Kreiss, was beside the pilot. He was leaning forward to search the stars in the blackness ahead, but the pilot turned often to stare through the

rear lookouts as if drawn in fearful fascination by what was there. Chet took the controls at Schwartzmann's order; the pilot saluted with a trembling hand and vanished into the cabin at the rear.

"Ready for flying orders, Doctor," the new pilot told Herr Kreiss. "I'll put her where you say—within reason."

Behind him he heard the choked voice of Mademoiselle Diane: *"Regardez! Ah, mon Dieu,* the beauty of it! This loveliness—it hurts!"

ONE hand was pressed to her throat; her face was turned as the pilot's had been that she might stare and stare at a quite impossible moon—a great half-disk of light in the velvet dark.

"This loveliness—it hurts!" Chet looked, too, and knew what Diane was feeling. There was a catch of emotion in his own throat—a feeling that was almost fear.

A giant half-moon!—and he knew it was the Earth. Golden Earth-light came to them in a flooding glory; the blazing sun struck on it from above to bring out half the globe in brilliant gold that melted to softest, iridescent, rainbow tints about its edge. Below, hung motionless in the night, was another sphere. Like a reflection of Earth in the depths of some Stygian lake, the old moon shone, too, in a half-circle of light.

Small wonder that these celestial glories brought a gasp of delight from Diane, or drew into lines of fear the face of that other pilot who saw only his own world slipping away. But Chet Bullard, Master Pilot of the World, swung back to scan a star-chart that the scientist was holding, then to search out a similar grouping in the black depths into which they were plunging, and to bring the cross-hairs of a rigidly mounted telescope upon that distant target.

"How far?" he asked himself in a half-spoken thought, "—how far have we come?"

THERE was an instrument that ticked off the seconds in this seemingly timeless void. He pressed a small lever beside it, and, beneath a glass that magnified the readings, there passed the time-tape. Each hour and minute was there; each movement of the controls was indicated; each trifling variation in the power of the generator's blast. Chet made some careful computations and passed the paper to Harkness, who tilted the time-tape recorder that he might see the record.

"Check this, will you, Walt?" Chet was asking. "It is based on the time of our other trip, acceleration assumed as one thousand miles per hour per hour out of air—"

The scientist interrupted; he spoke in English that was carefully precise.

"It should lie directly ahead—the Dark Moon. I have calculated with exactness."

Walter Harkness had snatched up a pair of binoculars. He swung sharply from lookout to lookout while he searched the heavens.

"It's damned lucky for us that you made a slight error," Chet was telling the other.

"Error?" Kreiss challenged. "Impossible!"

"Then you and I are dead right this minute," Chet told him. "We are crossing the orbit of the Dark Moon—crossing at twenty thousand miles per hour relative to Earth, slightly in excess of that figure relative to the Dark Moon. If it had been here—!" He had been watching Harkness anxiously; he bit off his words as the binoculars were thrust into his hand.

"There she comes," Harkness told him quietly; "it's up to you!"

But Chet did not need the glasses. With his unaided eyes he could see

a faint circle of violet light. It lay ahead and slightly above, and it grew visibly larger as he watched. A ring of nothingness, whose outline was the faintest shimmering halo; more of the distant stars winked out swiftly behind that ghostly circle; it was the Dark Moon!—and it was rushing upon them!

CHET swung an instrument upon it. He picked out a jet of violet light that could be distinguished, and he followed it with the cross-hairs while he twirled a micrometer screw; then he swiftly copied the reading that the instrument had inscribed. The invisible disk with its ghostly edging of violet was perceptibly larger as he slammed over the control-ball to up-end them in air.

Under the control-room's nitron illuminator the cheeks of Herr Doktor Kreiss were pale and bloodless as if his heart had ceased to function. Harkness had moved quietly back to the side of Diane Delacouer and was holding her two hands firmly in his.

The very air seemed charged with the quick tenseness of emotions. Schwartzmann must have sensed it even before he saw the onrushing death. Then he leaped to a lookout, and, an instant later, sprang at Chet calmly fingering the control.

"Fool!" he screamed, "you would kill us all? Turn away from it! Away from it!"

He threw himself in a frenzy upon the pilot. The detonite pistol was still in his hand. "Quick!" he shouted. "Turn us!"

Harkness moved swiftly, but the scientist, Kreiss, was nearer; it was he who smashed the gun-hand down with a quick blow and snatched at the weapon.

Schwartzmann was beside himself with rage. "You, too?" he demanded. "Giff it me—traitor!"

BUT the tall man stood uncompromisingly erect. "Never," he said, "have I seen a ship large enough to hold two commanding pilots. I take your orders in all things, Herr Schwartzmann—all but this. If we die—we die."

Schwartzmann sputtered: "We should haff turned away. Even yet we might. It will—it will—"

"Perhaps," agreed Kreiss, still in that precise, class-room voice, "perhaps it will. But this I know: with an acceleration of one thousand m.p.h. per hour as this young man with the badge of a Master Pilot says, we cannot hope, in the time remaining, to overcome our present velocity; we can never check our speed and build up a relatively opposite motion before that globe would overwhelm us. If he has figured correctly, this young man—if he has found the true resultant of our two motions of approach—and if he has swung us that we may drive out on a line perpendicular to the resultant—"

"I think I have," said Chet quietly. "If I haven't, in just a few minutes it won't matter to any of us; it won't matter at all." He met the gaze of Herr Doktor Kreiss who regarded him curiously.

"If we escape," the scientist told him, "you will understand that I am under Herr Schwartzmann's command; I will be compelled to shoot you if he so orders. But, Herr Bullard, at this moment I would be very proud to shake your hand."

And Chet, as he extended his hand, managed a grin that was meant also for the tense, white-faced Harkness and Diane. "I like to see 'em dealt that way," he said, "—right off the top of the deck."

But the smile was erased as he turned back to the lookout. He had to lean close to see all of the disk, so swiftly was the approaching globe bearing down.

IT came now from the side; it swelled larger and larger before his eyes. Their own ship seemed unmoving; only the unending thunder of the generator told of the frantic efforts to escape. They seemed hung in space; their own terrific speed seemed gone—added to and fused with the orbital motion of the Dark Moon to bring swiftly, closer that messenger of death. The circle expanded silently; became menacingly huge.

Chet was whispering softly to himself: "If I'd got hold of her an hour sooner—thirty minutes—or even ten. . . We're doing over twenty thousand an hour combined speed, and we'll never really hit it. . . . We'll never reach the ground."

He turned this over in his mind, and he nodded gravely in confirmation of his own conclusions. It seemed somehow of tremendous importance that he get this clearly thought out—this experience that was close ahead.

"Skin friction!" he added. "It will burn us up!"

He had a sudden vision of a flaming star blazing a hot trail through the atmosphere of this globe; there would be only savage eyes to follow it—to see the line of fire curving swiftly across the heavens. . . . He, himself, was seeing that blazing meteor so plainly. . . .

His eyes found the lookout: the globe was gone. They were close—close! Only for the enveloping gas that made of this a dark moon, they would be seeing the surface, the outlines of continents.

Chet strained his eyes—to see nothing! It was horrible. It had been fearful enough to watch that expanding globe. . . He was abruptly aware that the outer rim of the lookout was red!

For Chet Bullard, time ceased to have meaning; what were seconds—or centuries—as he stared at that glowing rim? He could not have told. The outer shell of their ship—it was radiant—shining red-hot in the night. And above the roar of the generator came a nerve-ripping shriek. A wind like a blast from hell was battering and tearing at their ship.

"Good-by!" He had tried to call; the demoniac shrieking from without smothered his voice. One arm was across his eyes in an unconscious motion. The air of the little room was stifling. He forced his arm down: he would meet death face to face.

THE lookout was ringed with fire; it was white with the terrible white of burning steel!—it was golden!—then cherry red! It was dying, as the fire dies from glowing metal plunged in its tempering bath—or thrown into the cold reaches of space!

In Chet's ears was the roar of a detonite motor. He tried to realize that the lookouts were rimmed with black—cold, fireless black! An incredible black! There were stars there like pinpoints of flame! But conviction came only when he saw from a lookout in another wall a circle of violet that shrank and dwindled as he watched. . .

A hand was gripping his shoulder; he heard the voice of Walter Harkness speaking, while Walt's hand crept over to raise the triple star that was pinned to his blouse.

"Master Pilot of the World!" Harkness was saying. "That doesn't cover enough territory, old man. It's another rating that you're entitled to, but I'm damned if I know what it is."

And, for once, Chet's ready smile refused to form. He stared dumbly at his friend; his eyes passed to the white face of Mademoiselle Diane; then back to the controls, where his hand, without conscious volition, was reaching to move a metal ball.

"Missed it!" he assured himself. "Hit the fringe of the air—just the very outside. If we'd been twenty thousand feet nearer! . . . He was moving the ball: their bow was swinging. He steadied it and set the ship on an approximate course.

"A stern chase!" he said aloud. "All our momentum to be overcome—but it's easy sailing now!"

He pushed the ball forward to the limit, and the explosion-motor gave thunderous response.

CHAPTER IV

The Return to the Dark Moon

NO man faces death in so shocking a form without feeling the effects. Death had flicked them with a finger of flame and had passed them by. Chet Bullard found his hands trembling uncontrollably as he fumbled for a book and opened it. The tables of figures printed there were blurred at first to his eyes, but he forced himself to forget the threat that was past, for there was another menace to consider now.

And uppermost in his mind, when his thoughts came back into some approximate order, was condemnation of himself for an opportunity that was gone.

"I could have jumped him," he told himself with bitter self-reproach; "I could have grabbed the pistol from Kreiss—the man was petrified." And then Chet had to admit a fact there was no use of denying: "I was as paralyzed as he was," he said, and only knew he had spoken aloud when he saw the puzzled look that crossed Harkness' face.

Harkness and Diane had drawn near. In a far corner of the little room Schwartzmann had motioned to Kreiss to join him; they were as far away from the others as could be managed. Schwartzmann, Chet judged, needed some scientific explanation of these disturbing events; also he needed to take the detonite pistol from Kreiss' hand and jam it into his own hand. His eyes, at Chet's unconscious exclamation, had come with instant suspicion toward the two men.

"Forty-seven hours, Walt," the pilot said, and repeated it loudly for Schwartzmann's benefit; "—forty-seven hours before we return to this spot. We are driving out into space; we've crossed the orbit of the Dark Moon, and we're doing twenty thousand miles an hour.

"Now we must decelerate. It will take twenty hours to check us to zero speed; then twenty-seven more to shoot us back to this same point in space, allowing, of course, for a second deceleration. The same figuring with only slight variation will cover a return to the Dark Moon. As we sweep out I can allow for the moon-motion, and we'll hit it at a safe landing speed on the return trip this time."

CHET was paying little attention to his companion as he spoke. His eyes, instead, were covertly watching the bulky figure of Schwartzmann. As he finished, their captor shot a volley of questions at the scientist beside him; he was checking up on the pilot's remarks.

Chet was leaning forward to stare intently from a lookout, his head was close to that of Harkness.

"Listen, Walt," he whispered; "the Moon's out of sight; it's easy to lose. Maybe I can't find it again, anyway—it's going to take some nice navigating—but I'll miss it by ten thousand miles if you say so, and even the Herr Doktor can't check me on it."

Chet saw the eyes of Schwartzmann grow intent. He reached ostentatiously for another book of tables, and he seated himself that he might figure in comfort.

"Just check me on this," he told Harkness.

He put down meaningless figures, while the man beside him remained silent. Over and over he wrote them —would Harkness never reach a decision?—over and over, until—

"I don't agree with that," Harkness told him and reached for the stylus in Chet's hand. And, while he appeared to make his own swift computations, there were words instead of figures that flowed from his pen.

"Only alternative: return to Earth," he wrote. "Then S will hold off; wait in upper levels. Kreiss will give him new bearings. We'll shoot out again and do it better next time. Kreiss is nobody's fool. S means to maroon us on Moon—kill us perhaps. He'll get us there, sure. We might as well go now."

CHET had seen a movement across the room. "Let's start all over again," he broke in abruptly. He covered the writing with a clean sheet of paper where he set down more figures. He was well under way when Schwartzmann's quick strides brought him towering above them. Again the detonite pistol was in evidence; its small black muzzle moved steadily from Harkness to Chet.

"For your life—such as is left of it—you may thank Herr Doktor Kreiss," he told Chet. "I thought at first you would have attempted to kill us." His smile, as he regarded them, seemed to Chet to be entirely evil. "You were near death twice, my dear Herr Bullard; and the danger is not entirely removed.

"'Forty-seven hours' you have said; in forty-seven hours you will land us on the Dark Moon. If you do not,"—he raised the pistol suggestively—"remember that the pilot, Max, can always take us back to Earth. You are not indispensable."

Chet looked at the dark face and its determined and ominous scowl. "You're a cheerful sort of soul, aren't you?" he demanded. "Do you have any faint idea of what a job this is? Do you know we will shoot another two hundred thousand miles straight out before I can check this ship? Then we come back; and meanwhile the Dark Moon has gone on its way. Had you thought that there's a lot of room to get lost in out here?"

"Forty-seven hours!" said Schwartzmann. "I would advise that you do not lose your way."

Chet shot one quizzical glance at Harkness.

"That," he said, "makes it practically unanimous."

Schwartzmann, with an elaborate show of courtesy, escorted Diane Delacouer to a cabin where she might rest. At a questioning look between Diane and Harkness, their captor reassured them.

"Mam'selle shall be entirely safe," he said. "She may join you here whenever she wishes. As for you,"—he was speaking to Harkness—"I will permit you to stay here. I could tie you up but this iss not necessary."

And Harkness must have agreed that it was indeed unnecessary, for either Kreiss or Max, or some other of Schwartzmann's men, was at his side continuously from that moment on.

CHET would have liked a chance for a quiet talk and an exchange of ideas. It seemed that somewhere, somehow, he should be able to find an answer to their problem. He stared moodily out into the blackness ahead, where a distant star was seemingly their goal. Harkness stood at his side or paced back and forth in the little room, until he threw himself, at last, upon a cot.

And always the great stern-blast roared; muffled by the insulated

walls, its unceasing thunder came at last to be unheard. To the pilot there was neither sound nor motion. His directional sights were unswervingly upon that distant star ahead. Seemingly they were suspended, helpless and inert, in a black void. But for the occasional glowing masses of strange living substance that flashed past in this ocean of space, he must almost have believed they were motionless—a dead ship in a dead, black night.

But the luminous things flashed and were gone—and their coming, strangely, was from astern; they flicked past and vanished up ahead. And, by this, Chet knew that their tremendous momentum was unchecked. Though he was using the great stern blast to slow the ship, it was driving stern-first into outer space. Nor, for twenty hours, was there a change, more than a slackening of the breathless speed with which the lights went past.

Twenty hours—and then Chet knew that they were in all truth hung motionless, and he prayed that his figures that told him this were correct. . . . More timeless minutes, an agony of waiting—and a dimly-glowing mass that was ahead approached their bow, swung off and vanished far astern. And, with its going, Chet knew that the return trip was begun.

He gave Harkness the celestial bearing marks and relinquished the helm. "Full speed ahead as you are," he ordered; "then at nineteen-forty on W.S. time, we'll cut it and ease on bow repulsion to the limit."

And, despite the strangeness of their surroundings, the ceaseless, murmuring roar of the exhaust, the weird world outside, where endless space was waiting for man's exploration—despite the deadly menace that threatened, Chet dropped his head upon his outflung arms and slept.

TO his sleep-drugged brain it was scarcely a moment until a hand was dragging at his shoulder.

"Forty-seven hours!" the voice of Schwartzmann was saying.

And: "Some navigating!" Harkness was exclaiming in flattering amazement. "Wake up, Chet! Wake up! The Dark Moon's in sight. You've hit it on the nose, old man: she isn't three points off the sights!"

The bow-blast was roaring full on. Ahead of them Chet's sleepy eyes found a circle of violet; and he rubbed his eyes savagely that he might take his bearings on Sun and Earth.

As it had been before, the Earth was a giant half-moon; like a mirror-sphere it shot to them across the vast distance the reflected glory of the sun. But the globe ahead was a ghostly world. Its black disk was lost in the utter blackness of space. It was a circle, marked only by the absence of star-points and by the halo of violet glow that edged it about.

Chet cut down the repelling blast. He let the circle enlarge, then swung the ship end for end in midspace that the more powerful stern exhaust might be ready to counteract the gravitational pull of the new world.

Again those impalpable clouds surrounded them. Here was the enveloping gas that made this a dark moon—the gas, if Harkness' theory was correct, that let the sun's rays pass unaltered; that took the light through freely to illumine this globe, but that barred its return passage as reflected light.

Black—dead black was the void into which they were plunging, until the darkness gave way before a gentle glow that enfolded their ship. The golden light enveloped them in growing splendor. Through every lookout it was flooding the cabin with brillant rays, until, from below them, directly astern of the

ship, where the thundering blast checked their speed of descent, emerged a world.

AND, to Chet Bullard, softly fingering the controls of the first ship of space—to Chet Bullard, whose uncanny skill had brought the tiny speck that was their ship safely back from the dark recesses of the unknown—there came a thrill that transcended any joy of the first exploration.

Here was water in great seas of unreal hue—and those seas were his! Vast continents, ripe for adventure and heavy with treasure—and they, too, were his! His own world—his and Diane's and Walt's! Who was this man, Schwartzmann, that dared dream of violating their possessions?

A slender tube pressed firmly, uncompromisingly, into his back to give the answer to his question. "Almost I wish you had missed it!" Herr Schwartzmann was saying. "But now you will land; you will set us down in some place that you know. No tricks, Herr Bullard! You are clever, but not clever enough for that. We will land, yess, where you know it is safe."

From the lookout, the man stared for a moment with greedy eyes; then brought his gaze back to the three. His men, beside Harkness and Diane, were alert; the scientist, Kreiss, stood close to Chet.

"A nice little world," Schwartzmann told them. "Herr Harkness, you have filed claims on it; who am I to dispute with the great Herr Harkness? Without question it iss yours!"

He laughed loudly, while his eyes narrowed between creasing wrinkles of flesh. "You shall enjoy it," he told them; "—all your life."

And Chet, as he caught the gaze of Harkness and Diane, wondered how long this enjoyment would last. "All your life!" But this was rather indefinite as a measure of time.

CHAPTER V

A Desperate Act

THE ship that Chet Bullard and Harkness had designed had none of the instruments for space navigation that the ensuing years were to bring. Chet's accuracy was more the result of that flyer's sixth sense—that same uncanny power that had served aviators so well in an earlier day. But Chet was glad to see his instruments registering once more as he approached a new world.

Even the sonoflector was recording; its invisible rays were darting downward to be reflected back again from the surface below. That absolute altitude recording was a joy to read; it meant a definite relationship with the world.

"I'll hold her at fifty thousand," he told Harkness. "Watch for some outline that you can remember from last time."

There was an irregular area of continental size; only when they had crossed it did Harkness point toward an outflung projection of land. "That peninsula," he exclaimed; "we saw that before! Swing south and inland. . . . Now down forty, and east of south. . . . This ought to be the spot."

Perhaps Harkness, too, had the flyer's indefinable power of orientation. He guided Chet in the downward flight, and his pointing finger aimed at last at a cluster of shadows where a setting sun brought mountain ranges into strong relief. Chet held the ship steady, hung high in the air, while the quick-spreading mantle of night swept across the world below. And, at last, when the little world was deep-buried in shadow, they saw the red glow of fires from a hidden valley in the south.

"Fire Valley!" said Chet. "Don't say anything about me being a navigator. Walt, you've brought us home, sure enough."

"Home!" He could not overcome this strange excitement of a homecoming to their own world. Even the man who stood, pistol in hand, behind him was, for the moment, forgotten.

Valley of a thousand fires!—scene of his former adventures! Each fumerole was adding its smoky red to the fiery glow that illumined the place. There were ragged mountains hemming it in; Chet's gaze passed on to the valley's end.

Down there, where the fires ceased, there would be water; he would land there! And the ship from Earth slipped down in a long slanting line to cushion against its under exhausts, whose soft thunder echoed back from a bare expanse of frozen lava. Then its roaring faded. The silvery shape sank softly to its rocky bed as Chet cut the motor that had sung its song of power since the moment when Schwartzmann had carried him off—taken him from that frozen, forgotten corner of an incredibly distant Earth.

"ISS there air?" Schwartzmann demanded. Chet came to himself again with a start: he saw the man peering from the lookout to right and to left as if he would see all that there was in the last light of day.

"Strange!" he was grumbling to himself. "A strange place! But those hills—I saw their markings—there will be metals there. I will explore; later I return: I will mine them. Many ships I must build to establish a line. The first transportation line of space. Me, Jacob Schwartzmann—I will do it. I will haff more than anyone else on Earth; I will make them all come to me crawling on their bellies!"

Chet saw the hard shine of the narrowed eyes. For an instant only, he dared to consider the chance of leaping upon the big, gloating figure. One blow and a quick snatch for the pistol! . Then he knew the folly of such a plan: Schwartzmann's men were armed; he would be downed in another second, his body a shattered, jellied mass.

Schwartzmann's thoughts had come back to the matter of air; he motioned Chet and Harkness toward the port.

Diane Delacouer had joined them and she thrust herself quickly between the two men. And, though Schwartzmann made a movement as if he would snatch her back, he thought better of it and motioned for the portal to be swung. Chet felt him close behind as he followed the others out into the gathering dark.

THE air was heavy with the fragrance of night-blooming trees. They were close to the edge of the lava flow. The rock was black in the light of a starry sky; it dropped away abruptly to a lower glade. A stream made silvery sparklings in the night, while beyond it were waving shadows of strange trees whose trunks were ghostly white.

It was all so familiar. . . . Chet smiled understandingly as he saw Walt Harkness' arm go about the trim figure of Diane Delacouer. No mannish attire could disguise Diane's charms; nor could nerve and cold courage that any man might envy detract from her femininity. Her dark, curling hair was blowing back from her upraised face as the scented breezes played about her; and the soft beauty of that face was enhanced by the very starlight that revealed it.

It was here that Walt and Diane had learned to love; what wonder that the fragrant night brought only

remembrance, and forgetfulness of their present plight. But Chet Bullard, while he saw them and smiled in sympathy, knew suddenly that other eyes were watching, too; he felt the bulky figure of Herr Schwartzmann beside him grow tense and rigid.

But Schwartzmann's voice, when he spoke, was controlled. "All right," he called toward the ship; "all iss safe."

Yet Chet wondered at that sudden tensing, and an uneasy presentiment found entrance to his thoughts. He must keep an eye on Schwartzmann, even more than he had supposed.

Their captor had threatened to maroon them on the Dark Moon. Chet did not question his intent. Schwartzmann would have nothing to gain by killing them now. It would be better to leave them here, for he might find them useful later on. But did he plan to leave them all or only *two?* Behind the steady, expressionless eyes of the Master Pilot, strange thoughts were passing. . . .

THERE were orders, at length, to return to the ship. "It is dark already," Schwartzmann concluded; "nothing can be accomplished at night.

"How long are the days and nights?" he asked Harkness.

"Six hours," Harkness told him; "our little world spins fast."

"Then for six hours we sleep," was the order. And again Herr Schwartzmann conducted Mademoiselle Delacouer to her cabin, while Chet Bullard watched until he saw the man depart and heard the click of the lock on the door of Diane's room.

Then for six hours he listened to the sounds of sleeping men who were sprawled about him on the floor; for six hours he saw the one man who sat on guard beside a light that made any thought of attack absurd. And he cursed himself for a fool, as he lay wakeful and vainly planning—a poor, futile fool who was unable to cope with this man who had bested him.

Nineteen seventy-three!—and here were Harkness and Diane and himself, captured by a man who was mentally and morally a misfit in a modern world. A throw-back—that was Schwartzmann: Harkness had said it. He belonged back in nineteen fourteen.

Harkness was beyond the watching guard; from where he lay came sounds of restless movement. Chet knew that he was not alone in this mood of hopeless dejection. There was no opportunity for talk; only with the coming of day did the two find a chance to exchange a few quick words.

THE guard roused the others at the first sight of sunlight beyond the ports. Harkness sauntered slowly to where Chet was staring from a lookout. He, too, leaned to see the world outside, and he spoke cautiously in a half-whisper:

"Not a chance, Chet. No use trying to bluff this big crook any more. He's here, and he's safe; and he knows it as well as we do. We'll let him ditch us—you and Diane and me. Then, when we're on our own, we'll watch our chance. He will go crazy with what he finds—may get careless—then we'll seize the ship—" His words ended abruptly. As Schwartzmann came behind them, he was casually calling Chet's attention to a fumerole from which a jet of vapor had appeared. Yellowish, it was; and the wind was blowing it.

Chet turned away; he hardly saw Schwartzmann or heard Harkness' words. He was thinking of what Walt had said. Yes, it was all they could do; there was no chance of a fight with them now. But later!

Diane Delacouer came into the control-room at the instant; her dark eyes were still lovely with sleep, but they brightened to flash an encouraging smile toward the two men. There were five of Schwartzmann's men in the ship besides the pilot and the scientist, Kreiss. They all crowded in after Diane.

They must have had their orders in advance; Schwartzmann merely nodded, and they sprang upon Harkness and Chet. The two were caught off their guard; their arms were twisted behind them before resistance could be thought of. Diane gave a cry, started forward, and was brushed back by a sweep of Schwartzmann's arm. The man himself stood staring at them, unmoving, wordless. Only the flesh about his eyes gathered into creases to squeeze the eyes to malignant slits. There was no mistaking the menace in that look.

"I THINK we do not need you any more," he said at last. "I think, Herr Harkness, this is the end of our little argument—and, Herr Harkness, you lose. Now, I will tell you how it iss that you pay.

"You haff thought, perhaps, I would kill you. But you were wrong, as you many times have been. You haff not appreciated my kindness; you haff not understood that mine iss a heart of gold.

"Even I was not sure before we came what it iss best to do. But now I know. I saw oceans and many lands on this world. I saw islands in those oceans.

"You so clever are—such a great thinker iss Herr Harkness—and on one of those islands you will haff plenty of time to think—yess! You can think of your goot friend, Schwartzmann, and of his kindness to you."

"You are going to maroon us on an island?" asked Walt Harkness hoarsely. Plainly his plans for seizing the ship were going awry. "You are going to put the three of us off in some lost corner of this world?"

Chet Bullard was silent until he saw the figure of Harkness struggling to throw off his two guards. "Walt," he called loudly, "take it easy! For God's sake, Walt, keep your head!"

This, Chet sensed, was no time for resistance. Let Schwartzmann go ahead with his plans; let him think them complacent and unresisting; let Max pilot the ship; then watch for an opening when they could land a blow that would count! He heard Schwartzmann laughing now, laughing as if he were enjoying something more pleasing than the struggles of Walt.

CHET was standing by the controls. The metal instrument-table was beside him; above it was the control itself, a metal ball that hung suspended in air within a cage of curved bars.

It was pure magic, this ball-control, where magnetic fields crossed and recrossed; it was as if the one who held it were a genie who could throw the ship itself where he willed. Glass almost enclosed the cage of bars, and the whole instrument swung with the self-compensating platform that adjusted itself to the "gravitation" of accelerated speed. The pilot, Max, had moved across to the instrument-table, ready for the take-off.

Schwartzmann's laughter died to a gurgling chuckle. He wiped his eyes before he replied to Harkness' question.

"Leave you," he said, "in one place? *Nein!* One here, the other there. A thousand miles apart, it might be. And not all three of you. That would be so unkind—"

He interrupted himself to call to Kreiss who was opening the port.

"No," he ordered; "keep it closed. We are not going outside; we are going up."

But Kreiss had the port open. "I want a man to get some fresh water," he said; "he will only be a minute."

He shoved at a waiting man to hurry him through the doorway. It was only a gentle push; Chet wondered as he saw the man stagger and grasp at his throat. He was coughing—choking horribly for an instant outside the open port—then fell to the ground, while his legs jerked awkwardly, spasmodically.

Chet saw Kreiss follow. The scientist would have leaped to the side of the stricken man, whose body was so still now on the sunlit rock; but he, too, crumpled, then staggered back into the room. He pushed feebly at the port and swung it shut. His face, as he turned, was drawn into fearful lines.

"Acid!" He choked out the words between strangled breaths. "Acid—sulfuric—fumes!"

CHET turned quickly to the spectro-analyzer; the lines of oxygen and nitrogen were merged with others, and that meant an atmosphere unfit for human lungs! There had been a fumerole where yellowish vapor was spouting: he remembered it now.

"So!" boomed Schwartzmann, and now his squinting eyes were full on Chet. "You—you *schwein!* You said when we opened the ports there would be a surprise! Und this iss it! You thought to see us kill ourselves!

"Open that port!" he shouted. The men who held Chet released him and sprang forward to obey. The pilot, Max, took their place. He put one hand on Chet's shoulder, while his other hand brought up a threatening, metal bar.

Schwartzmann's heavy face had lost its stolid look; it was alive with rage. He thrust his head forward to glare at the men, while he stood firmly, his feet far apart, two heavy fists on his hips. He whirled abruptly and caught Diane by one arm. He pulled her roughly to him and encircled the girl's trim figure with one huge arm.

"Put you *all* on one island?" he shouted. "Did you think I would put you *all* out of the ship? You"—he pointed at Harkness—"and you"—this time it was Chet—"go out now. You can die in your damned gas that you expected would kill me! But, you fools, you imbeciles—Mam'selle, she stays with me!" The struggling girl was helpless in the great arm that drew her close.

Harkness' mad rage gave place to a dead stillness. From bloodless lips in a chalk-white face he spat out one sentence:

"Take your filthy hands off her—now—or I'll—"

Schwartzmann's one free hand still held the pistol. He raised it with deadly deliberation; it came level with Harkness' unflinching eyes.

"Yes?" said Schwartzmann. "You will do—what?"

CHET saw the deadly tableau. He knew with a conviction that gripped his heart that here was the end. Walt would die and he would be next. Diane would be left defenseless. . . . The flashing thought that followed came to him as sharply as the crack of any pistol. It seemed to burst inside his brain, to lift him with some dynamic power of its own and project him into action.

He threw himself sideways from under the pilot's hand, out from beneath the heavy metal bar—and he whirled, as he leaped, to face the man. One lean, brown hand clenched to a fist that started a

long swing from somewhere near his knees; it shot upward to crash beneath the pilot's outthrust jaw and lift him from the floor. Max had aimed the bar in a downward sweep where Chet's head had been the moment before; and now man and bar went down together. In the same instant Chet threw himself upon the weapon and leaped backward to his feet.

One frozen second, while, to Chet, the figures seemed as motionless as if carved from stone—two men beside the half-opened port—Harkness in convulsive writhing between two others—the figure of Diane, strained, tense and helpless in Schwartzmann's grasp—and Schwartzmann, whose aim had been disturbed, steadying the pistol deliberately upon Harkness—

"Wait!" Chet's voice tore through the confusion. He knew he must grip Schwartzmann's attention—hold that trigger finger that was tensed to send a detonite bullet on its way. "Wait, damn you! I'll answer your question. I'll tell you what we'll do!"

In that second he had swung the metal bar high; now he brought it crashing down in front of him. Schwartzmann flinched, half turned as if to fire at Chet, and saw the blow was not for him.

WITH a splintering crash, the bar went through an obstruction. There was sound of glass that slivered to a million mangled bits—the sharp tang of metal broken off—a crash and clatter—then silence, save for one bit of glass that fell belatedly to the floor, its tiny jingling crash ringing loud in the deathly stillness of the room. . . .

It had been the control-room, this place of metal walls and of shining, polished instruments, and it could be called that no longer. For, battered to useless wreckage, there lay on a metal table a cage that had once been formed of curving bars. Among the fragments a metal ball that had guided the great ship still rocked idly from its fall, until it, too, was still.

It was a room where nothing moved—where no person so much as breathed. . . .

Then came the Master Pilot's voice, and it was speaking with quiet finality.

"And that," he said, "is your answer. Our ship has made its last flight."

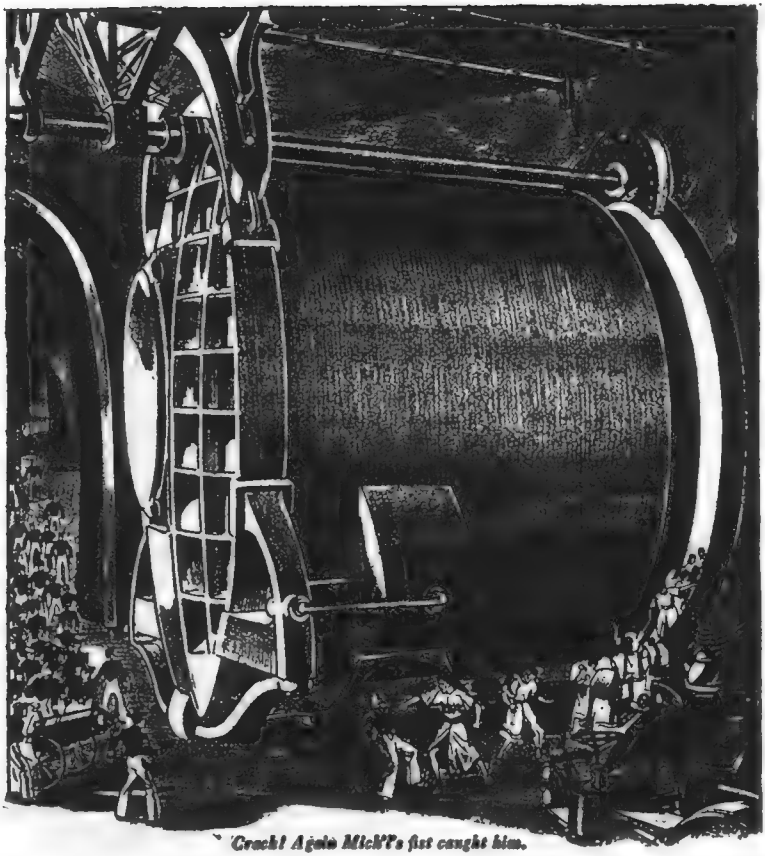
His eyes held steadily upon the blanched face of Herr Schwartzmann, whose limp arms released the body of Diane; the pistol hung weakly at the man's side. And the pilot's voice went on, so quiet, so hushed—so curiously toneless in that silent room.

"What was it that you said?—that Harkness and I would be staying here? Well, you were right when you said that, Schwartzmann; but it's a hard sentence, that—imprisonment for life."

Chet paused now, to smile deliberately, grimly at the dark face so bleached and bloodless, before he repeated:

"Imprisonment for life!—and you didn't know that you were sentencing yourself. For you're staying too, Schwartzmann, you contemptible, thieving dog! You're staying with us—here—on the Dark Moon!"

(To be continued.)



Crack! Again Mick's fist caught him.

If The Sun Died

By R. F. Starzl

BY our system of time we would have called it around 65,000 A. D., but in this cavern world, miles below the long-forgotten surface of the earth, it was 49,889 Since the Death of the Sun. That legendary sun was but a dim racial memory, but the 24-hour day, based on its illusory travel across the sky, was still maintained by uranium clocks, by which the myriads who dwelt in the galleries and maze of the underworld warrens regulated their lives.

Tens of milleniums after the Death of the Sun there comes a young man who dares to open the Frozen Gate of Subterranea.

In the office of the nation's central electro-plant

sat a young man. He was unoccupied at the moment. He was an example of the marvelously slow process of evolution, for to all outward appearances he differed little from a Twentieth Century man. Keen intelligence sat on his fine-cut, kindly young face. In general build he was lighter, more refined than a man of the past. Yet even the long, delicately colored robe of mineral silk which he wore could not detract from his obvious virility and strength.

His face flashed in a smile when a girl suddenly appeared in the middle of the room, materializing, so it seemed, out of nowhere. She resembled him to some extent, except that she was exquisitely feminine, dark-haired, with a skin of warm ivory, while he was blond and ruddy. Her tinkling, silvery voice was troubled as she asked:

"Have I your leave to stay, Mich'l Ares?"

The look of adoration he gave her was answer enough, but he answered with the conventional formula, "It is given." He rose to his feet, walked right through the seemingly solid vision and made an adjustment on a bank of dials. Then he walked through the apparition again and, standing beside his chair, looked at her inquiringly.

"You haven't forgotten, Mich'l, this is the day of the Referendum?"

Mich'l smiled slightly. It would be a day of confusion in Subterranea if he should forget. As chief of the technies he was in direct charge of the tabulating machines that would, a few seconds after the vote, give the result in the matter of the opening of the Frozen Gate. But the girl's concern sobered him instantly. On the decision of the people at noon depended the life work of her father, Senator Mane. And it was now nine o'clock.

"I am sure they will order the Gate opened," he said instantly. "All the technies are agreed that your father is right, that the Great Cold was only another, more severe ice age—not the death of the Sun. The technies—"

JUST as the girl had seemingly materialized, a young man now stood beside her. In appearance he was a picture of pride, power, arrogance, and definite danger. His hawklike, patrician features were smiling. This olive-skinned, dark young rival of Mich'l was Lane Mollon, son of Senator Mollon, ruthless administration leader and bitter opponent of Senator Mane's Exodus faction.

Lane looked at Mich'l insolently.

"Have I your leave to stay, Mich'l Ares?" he asked.

"It is given," said Mich'l without enthusiasm.

"I'm not calling on you of my own will, Mich'l," the apparition of young Mollon said contemptuously, "but Nida had the telucid turned on as I stepped into the room."

"It's as well for you that you're not here personally," Mich'l replied promptly. "The last time we met I believe I was obliged to knock you down."

Lane Mollon flushed, with a sidelong glance at Nida. The girl gave Mich'l a frightened look.

Lane interpreted her concern rightly.

"Ordinarily it's not safe to try anything like that with me. I could have you executed in half an hour. But I don't have to call on the State to punish you. Nida, you'll admit I'm taking no unfair advantage of him?"

"Oh, I do, Lane, but—"

Lane reached out his hand to the dial, invisible to Mich'l, which operated the telucid apparatus, and immediately the apparitions vanished. Mich'l looked at his own telucid, its great unwinking eye set in the wall. But he did not project his own illusory body to the girl's home. He

was a technic—one of the pitifully few trained men and women who kept the intricate automatic machinery working. On them rested the immense, stupid civilization of the caverns, and there was work to do. Mich'l felt that on this morning of her father's greatest trial Nida would pay scant attention to Lane.

MICH'L was testing some of the controls when Gobet Hanlon came in. Gobet was also a technic, and Mich'l's special friend. Like Mich'l, he wore the light robe that was universal among the civilians in the equable climate of the caverns. He walked with the light, springy step that was somehow characteristic of the specialized class to which he belonged, as distinguished from the languid gait of the pampered, lazy populace. Attached to his girdle of flat chain links was a tiny computing machine about as large as the palm of a man's hand. For Gobet did most of the mathematical work.

"You'll want me at the tabulating section?" Gobet stated inquiringly.

"It may be well," Mich'l smiled. "For the first time in centuries, I believe, the general public is going to vote."

"Flos Entine wants to come along."

Mich'l's smile changed to a grin. He knew the pretty, willful little sweetheart of Gobet's. If she wanted to be at the tabulating plant she would be there.

"In fact," Gobet confessed somewhat sheepishly, "she is in the car."

The car was waiting in the gallery. It had no visible support, but hovered a few inches above the floor above one of two parallel aluminum alloy strips that stretched, like the trolley tracks of the ancients, throughout all the galleries. The ancients well knew that aluminum is repelled by magnetism, but the race had lived in the caverns for centuries before evolving an alloy that possessed this repulsive power to a degree strong enough to support a considerable weight.

Under Mich'l's guidance the car moved forward silently, through interminable busy streets with arched roofs, lined on either side with doors that led to homes, theaters and food distributing automats. Occasionally they passed public gardens, purely ornamental, in which a few specimens of vegetation were preserved. They passed multitudes of people, most of them handsome with a pampered, hot-house prettiness, but betraying the peculiar lassitude which had been sapping the energies of this once dynamic race for millenia. Yet to-day they showed almost eagerness. The name of Leo Mane, prophet of deliverance, was on every tongue. And what was the Sun like? Like the great vita-lights that were prescribed by law and evaded by everyone, except possibly the technics? Those technics—they seemed to delight in work! Curious glances fell on the gliding car. Some work in connection with the Referendum? What must one do to vote? Oh, the telucid!

ARRIVING at Administration Circle, the car entered a vast excavation half a mile in diameter, possibly a thousand feet high at the dome. Here were the entrances to some of the principal Government warrens. Here also centered the streets, like radiating spokes of a wheel, on which many of the officials lived. Here the emanation bulbs were more frequent than in the galleries, so that the light was almost glaring. Guards of soldier-police, the stolid, well-fed, specialized class produced by centuries of a static civilization, were everywhere. Not in the memory of their grandparents had they done any fighting, but in their short, brightly colored tunics, flaring trousers and little kepis they looked very smart. Their

only weapon was a small tube capable of projecting a lethal light-ray.

Mich'l led his party to the audience hall. It was only a few hundred feet in diameter. At one end was the speaker's rostrum. Senator Mane was already there. He was tall, purposeful, but withal tired and wistful looking. His graying hair was cut at the nape of his neck, sweeping back from his swelling temples in a manner really suggestive of a mane. His large, luminous eyes lit up.

"Is it nearly time?"

"Yes, Senator," Mich'l said. "The nation will soon assemble."

"You have met Senator Mollon?"

"I have had the pleasure," Mich'l acknowledged with polite irony, "since Senator Mollon gives me practically all my orders."

Mollon acknowledged the tribute with a quick smile, without rising from his chair. He, too, was different from the average Subterranean in that he was forceful and aggressive, like Senator Mane. He was still youngish looking, of powerful, blocky build. His dark hair was carefully parted in the middle and brushed down sleekly. The Twentieth Century had known his prototype, the successful, powerful, utterly unscrupulous politician; and in a different sphere, that type of extra-Governmental ruler which the ancients called "gangster." It was casually discussed in Subterranea that certain of the state soldier-police were responsible for the mysterious assassinations that had so conveniently removed most of the effective resistance to Mollon's progress in the Senate. The once potent body had not held a session in ten years: didn't dare to, a cynical and indifferent public said. And a strange reluctance on the part of qualified men to accept the Presidential nomination had left that office unfilled for the past three years. Mollon, as party dictator, performed the duties of President provisionally.

FLOS, mischievous as usual, rounded her great blue eyes and gazed at Mollon with an expression of rapt admiration.

"Oh, Senator," she thrilled. "I think it's wonderful of you to give Senator Mane an opportunity to debate with you. You are so kind!"

Mollon failed to detect any mockery, luckily for Flos. He looked at her with half-closed eyes.

"The public must be satisfied," he rumbled. "Senator Mane has aroused in them great hopes. A small matter might be adjusted, but only a Referendum will satisfy them in this."

"But Senator, the race is going to ruin. If we could get into the Sun again—wouldn't you want that?"

"I don't believe there is a 'Sun'," Mollon replied; then, with the candor of one who is perfectly sure of himself, added:

"If Mane were right, I still couldn't permit the Frozen Gate to be opened. I can control the people for their own good, here; it might not be possible Outside."

A deep musical note sounded. Suddenly the myriad inhabitants of Subterranea seemed to be milling around in the room. Actually their bodies were in their dwelling cells, but their telucid images filled the hall. By a simple adjustment of the power circuit, their images, instead of being life size, were made only about an inch high, permitting the accommodation of the entire nation in the hall. Their millions of tiny voices, mingling, made a sighing sound.

MANE rose and stepped forward, raising his hand.

"Citizens of Subterranea," he began in powerful, resonant tones, and then went on to put into his address all the fervor of a lifetime of ea-

deavor. He told them of those times in the dim past when the human race still dwelt on the surface of the earth. Of the Sun that poured out inexhaustible floods of life and light; of the green things that were grown, not only to look at, but for food for all living things before food was made synthetically out of mined chemicals. Of the world overrun by a teeming, happy, dynamic civilization.

"Then something happened. The Sun seemed to give less light, less heat. Perhaps we ran into a cloud of cosmic dust that intercepted the Sun's rays. Perhaps the cause was to be found in some change in the Sun's internal structure. But the effects could not be doubted. Ice began to come down from the poles. Ice barriers higher than the highest towers covered the world, wiping out all life but the most energetic.

"Our ancestors, and many other advanced nations, began to burrow toward the hot interior of the earth. We to-day have no idea of the labor that went into the digging of our underground home. We are becoming degenerate. More and more of us, even those who still use the vita-lights, are becoming pale and flabby. There are hardly enough technies to keep the automatic machinery in order. What will happen when those technies also deteriorate, and lose the will to work? For deteriorate they must, just as Senator Mollon and his still active allies will. Just as I will, if I live long enough. There is a great force that we never know here. It is call the cosmic ray. It never penetrates to our depth. And our vita-lights do not produce it."

He then spoke of the proposed Exodus, argued, pleaded, painted a rosy picture of the outer world, of a Sun come back, a world of brightness and life. At the conclusion of his speech a sigh arose from the assembled millions—a sigh of hope, of half belief. Had the vote been taken then the Frozen Gate would have been opened.

BUT Senator Mollon was on the rostrum, holding up a square, well manicured hand for attention. In his deep rumbling bass he tore the arguments for the Exodus to shreds. With the whip of fear he drove away hope.

"If our savage ancestors lived on the inhospitable outer shell of the earth," he shouted, "is that a reason for our taking that retrograde step? Read your histories. What happaned to our neighboring nation of Atlantica only a short 15,000 years ago? They did just as this man is urging—opened their outer gate. It promptly froze open, and liquid air, the remnant of what in primordial days was an outer atmosphere, poured down the tunnels. The whole nation died, and we saved ourselves only by blasting the connecting passages between them and us with fulminite."

A wave of fear passed over the tiny massed figures. For centuries the race had been rapidly losing all initiative, except for those few leaders who, through superior stamina and religious devotion to the artificial sun-rays, had maintained something of their pristine energy.

Now they were hysterical with fear of the unknown. Even as Mich'l Ares adjusted the parabolic antenna of the thought-receptor vote-counting machine, he knew what the verdict would be. In a moment the vote was flashed on a screen on the ceiling: 421 in favor of the Exodus and 2,733,485 against it. There was an eery cheer from the people, and they began to dissolve like smoke. Mollon rose, bowed politely and smilingly, and walked out to where his magnetic car awaited him.

IT was with a feeling of deep depression that Mich'l Ares went to work the next morning. His

despair was shared by the technics under him with whom he talked. At the telestereo station he found a bitter young man broadcasting a prepared commentary on the election ordered by Senator Mollon. It was congratulatory in nature, designed to confirm popular opinion that the nation had been saved from a great catastrophe and to glorify the principles of Mollon's party.

". . . And so once more this great nation has demonstrated its ability to govern itself, to protect itself against dangerous and unsocial experiments. The voice of the people is the voice of God. The Government claims for itself no credit for this momentous decision. Each citizen has done his share toward the continuation of our safety, our prosperity. . . ."

The young man finished the document, smiled a charming smile, and turned off the switch. Then he grimaced his disgust and lapsed into a glum meditation.

"What say, Kratz?" Mich'l asked.

"Trouble again on the west sector. Had trouble getting power enough. Generators ought to be overhauled." He made a helpless gesture.

"How about conscripting a little labor?"

"Tried it this morning. Most of the people are still in a daze from chewing too much merclite. Those that're sober are too busy preening themselves for voting on the winning side."

Kratz informed Mich'l that Mollon had that morning given up all pretense of constitutional government, had preempted the treasury, and was consolidating his position as avowed dictator.

"He probably wanted to do that a long time," Mich'l commented. "He didn't quite dare till that Referendum yesterday gave him the real measure of the public. Well, I've got to be going."

MICH'L took one of the small mechanical service tunnels back to his office. This latest news had hardly affected him, so keen was his disappointment over the defeat of the Exodus. But he wanted to be alone. He walked through vast halls full of machinery, abandoned and rusting, through dark corridors that had once roared with industrial life. What would happen when the present overloaded machinery should break down; wear out? The remnants of the great technical army could hardly serve what was left. Each passing year these silent, useless hulks became more numerous. The specter of famine was stalking amid the dusty pipes and empty vats of the chemical plants; the horrors of darkness lurked amid the tarnished compression spheres and the long, hooded monstrosities of the power plants, inadequately served by harassed and overworked technics.

In the middle of his office Mich'l found the telucid counterpart of Mila, sister of Nida Mane. She was younger than Nida, hardly more than sixteen. Her eyes were wide with terror as she sought Mich'l. Her cheeks were wet with tears, and her silken brown hair fell in careless disarray.

"Mich'l!" she cried, as soon as she saw him, "Lane Mollon has taken Nida!"

"Taken her!"

"And Father is under arrest. Lane came this morning, crazy with merolite gum. He had four or five soldiers with him. When Nida refused to see him they broke down the door and went to her room. They dragged her out to Lane's car, and he took her to his warren near the Presidential quarters."

"She there now?"

"Yes. Father followed Lane's car. Guards kept him out of Lane's warren, so he went to see Mollon. That devil only laughed at him, offered to call another Referendum. Father

had a small pocket needle-ray and—"

"Good! He killed Mollon?"

"No. But he managed to burn a hole through his arm. He was rushed off to one of the cells. And Mollon says he will call a Referendum to decide Father's fate."

"It would be just like that devil's sense of humor to let the people decree their only friend's death."

"THEY'LL do it, too!" Mila exclaimed tragically. "Oh, how I wish Mother were alive!"

"And each one will feel deep within him that he has done a great, commendable and original thing!" Mich'l added, with keen insight.

Mila sank to the floor.

"Go to your room," Mich'l said, gently stern. "Mollon and his gang have reckoned without the technies." A woman's image appeared, stooping commiseratingly over Mila—a friend of the family. Mich'l ordered her to care for Mila. Then he took a deep breath. Gone was his feeling of helpless sorrow, leaving only an overwhelming, steadying, satisfying anger. He flung the telucid switch, barked cracking orders.

In half an hour every technical man of Subterranea was in a large storeroom near Mich'l's office. They were mostly young, keen and alert, their skins red or brown from the actinic lights, their hair showing more or less bleaching from the same cause. As Mich'l talked they became intent; they listened with a cold, deadly silence that would perhaps have made the smug millions of Subterranea quake with fear.

This affront put upon the only man in the Government who could speak their language, who could comprehend their ideals; the peril of the girl they all knew and loved: these things set their long-repressed resentment flaring to white heat. They were ready for desperate things. A turn of a valve and water would thunder through the maze of galleries; a mishap far, far down toward the earth's hot core, and steam would rush up—

BUT Mich'l steadied them. After all, Subterranea was their country. Anarchy was far from the technie ideals. He had a plan.

"Nothing is to be done until we have Senator Mane and Nida," Mich'l instructed them. "Remember that! Do nothing until you hear from me. Each of you go to your station. Set all adjustments so that they will not need attention for some weeks, at least. Those of you who have families, tell them to be ready to move to another residence. Say nothing about any trouble—understand?"

There were nods of assent.

"You will proceed to your posts and keep busy. When I come it'll be by telucid. I will say nothing. I will simply wave my hand. That means you are to take your wives, your families, your sweethearts, to Substation No. 37X."

There were audible gasps.

"Not 37X!" exclaimed one of the older men. "Why, that's twenty miles up, near the Frozen Gate!"

"Yes!" Mich'l smiled with tight lips. "You men willing?"

There was an instantaneous shout of approval. Curiously enough, seizure of the Gate by force had not occurred to any of this law-abiding, well-disciplined group. But Mollon's lawless seizure of the Government had removed all inhibitions of that sort. Seizure of the Gate would bring at one stroke the realization of the dream that the technies had tried for generations to win by political means. Surely, when the Gate was open, and they could see the glorious, half-mythical Sun for themselves, the people would consent to the Exodus!

For the technies, even in the bitterness of defeat, were not antisocial. They hoped and worked for

the devitalized races of Subterranea, for the betterment of their condition, more than for their own. The technies were the fittest; they had demonstrated their ability to survive unchanged under adverse conditions. They would be least helped by the Exodus. Yet they had worked for it all their lives, as had their fathers before them, out of unselfish love for humanity. There have always been such men. Through the murk of history we see their lives as small, steady lights, infrequent and lonely. With the opening of the Frozen Gate suddenly a possibility, the technies forgot their exasperation with the stupid mob.

"THE Gate is guarded," said an elderly man dubiously.

"A small guard," Gobet Hanlon remarked quickly, "and probably dazed with merclite. Nothing to fear."

"Stay away from the Gate," Mich'l instructed. "Give no cause for alarm. If an emergency arises while I'm gone, see Gobet."

"Don't go alone, Mich'l," Gobet begged. "A few of us with ray-needles can storm the detention cells. We can clean out Lane's warren."

"We might, but the Senator and Nida would be gone. The alarm would be given. In a few minutes there'd be a mob."

The technies were already dispersing eagerly. Mich'l pressed his friend's hand, saying:

"I'll take my needle-ray, and I know every way to get around there is. Alone, I'll attract no attention. Till later, Gobet!" And he was gone.

Mich'l's way was through the smaller, less frequented communication passages used principally by the technies. Occasionally he did meet citizens, still light-headed after their election victory celebration, and lost, but he paid them no heed. He came to the ventilation center of that level.

For ages no air had entered Subterranea from the outside. All of the air had to be regularly reconditioned, and so was returned, through a systematic network of air ducts, to a vast, central chemical plant. It was a latter-day Cave of the Winds, where the north, south, east and west winds of that buried empire regularly returned for a brief few minutes of play amid chemical sprays, condensers, humidifiers, oxydisers, to be again dispatched to their drudgery. This hall was truly colossal, filled to the shadowy ceilings, a thousand feet high, with gigantic pipes, tanks, wind-turbines.

THE technie in charge had not yet returned, but Mich'l consulted the distribution plan, and soon located the duct that led to Lane Mollon's warren. In a few minutes he was running, helped along by a strong current of fresh air. The map had shown the warren to be about a mile away. For the benefit of the technies who had to work there, the duct was plainly marked; and the lighting, by infrequent emanation bulbs, was adequate, though dim.

Mich'l had made no plans for a course of action after arriving at his destination. He felt reasonably sure that if he could get into the warren he would have a good chance to escape with Nida. In the confusion he could hide her nearby, and perhaps effect the release of the senator also. He had no doubt about his fate if he were caught. Lane's pose of good sportsmanship having failed to impress Nida, he had adopted simple, brutal coercion. Mich'l's fate, if caught interfering, would be summary execution.

Mich'l found the grating which he sought. It bore the key number of Lane's establishment. The key which would unlock it was of course in the hands of the police; but the bars were badly corroded, and Mich'l managed to bend them enough to permit the passage of his body.

He found himself in a small chamber, from which ducts led to all parts of the warren. These ducts were too small to permit passage of his body, however: it would be necessary to come into the open. A small metal door promised egress. Mich'l climbed out, and faced a surprised cook in the kitchen, engaged in flavoring synthetic food drinks. Mich'l said explanatorily:

"Inspection, air service."

The cook did not know the regulations about keeping the air tunnels locked. Moreover, he, like all other servants of the mighty, worked unwillingly, being conscripted. He only grunted.

MICH'L made a pretense of testing the air currents. Presently he stepped into one of the communicating corridors. The warren was planned something like a house of the Surface Age, with luxuriously furnished rooms, baths, dining halls, and all the appurtenances of wealth. Arriving at a rotunda, in the center of which was a glowing fountain, Mich'l encountered a guard. Boldly he asked him:

"Where is Mr. Mollon? I wish to see him."

The guard looked surprised.

"About Nida Mane, sir? I would hardly dare."

Mich'l looked at the man sharply, but there was no hint of recognition in the stupid, phlegmatic face.

"What about Nida Mane? It is about her I wish to speak."

There was a slight stirring of interest in the soldier's face.

"He will be glad to see you, sir, if you bring news of her."

"Eh, yes? Perhaps what I have to tell will be of no interest to him."

"If you can tell him where she is he will ask no more of you."

"She made good her escape then?"

Slow suspicion was dawning at last.

"For one who brings news you ask a lot of questions," the guard remarked heavily, as his hand slipped to the needle-ray weapon at his side. "Show your pass!"

Like a flash Mich'l was upon him, his hand at the thick throat, the other grasping the wrist. Although the soldier, like the majority of the populace, lacked the intense vitality of the technies, he had stubborn strength, and he fought effectively in the drilled, automatic way of his kind. Mich'l was further handicapped by the necessity of maintaining silence. One shout, and a dozen needle-rays would no doubt perforate his body with holes and slash his flesh with smoldering cuts.

GRUNTING and sweating, they fought all around the rose-colored curb of the fountain. At last Mich'l succeeded in forcing his adversary over the low stone, and they went over together with a resounding splash. The straining body of the guard suddenly relaxed, and a spreading red cloud in the water disclosed that he had struck his head against the first of the terraces that rose in the fountain's mist-shrouded center.

Up one of the corridors a door opened, and an angry voice shouted:

"Gurka! Gurka! I'll have you in bracelets! Captain of the guard!"

"Sir!" From another of the corridors came a sound of running feet. A command rang out:

"On the double!"

An officer, followed by four soldiers, dashed around the corner and flashed by the fountain. Peering over the curb, Mich'l saw them, some hundred yards away, come to a halt before an opened door. With a thrill of exultation Mich'l recognized the tall figure of Lane Mollon, looking like a slightly damaged satyr of the better class, for his head was bandaged, and he was in bad humor.

"Captain!" he stormed, "I want you to put that damned louse in sol-

itary confinement for a year. Hear?"

"Yes, sir." Like a megaphone the long corridor carried the low, respectful words to Mich'l's ears.

Lane continued to storm:

"And if you put another damned merclite-crazy blunker* on guard in this place I'll have your commission. Hear?"

"Yes, sir."

A QUICK decision was necessary, and Mich'l acted without hesitation. The guard had rolled over on his back, so that his face was out of the water, and he was breathing with quick, painful gasps. Mich'l dragged him up under the concealing shelter of the fountain spray, and there changed clothes with him. In the meantime the flowing water washed away the red stain of blood. When the captain returned with his guard, Mich'l was lying realistically in the pool, apparently deep in drugged sleep, the little kepi tilted rakishly over his face.

He was roughly seized and dragged out of the water to the accompaniment of much cursing. A fist crashed into his face.

Suddenly the soldiers felt the supine figure under their hands explode into energy. Elbows and fists seemed to fly from all directions at once. A needle-ray appeared, and before they could draw their own weapons they were howling with pain as searing welts drew over their bodies. With one accord they plunged into the pool. Only the officer remained, and he fell to the mosaic floor, his weapon half raised, the small black hole in his chest giving off a burnt odor.

Mich'l appropriated the officer's brassard of rank, and, menacing the cowed guards, forced them to herd into a nearby room, carrying the body of the officer with them. Mich'l locked the door and looked around. He saw no one observing him, and could count on carrying a pretty good bluff in his uniform, which was rapidly shedding its water. With a firm step Mich'l walked to Lane Mollon's door, threw it open, and entered.

LANE sat up on his couch, his feet striking the floor with an angry thump. But when he recognized Mich'l he paled slightly.

"Where is she?" Mich'l demanded roughly, "before I turn you down!"

"You said on[illegible] Lane began sneeringly, "that [illegible]anted to fight me. Now, if yo[illegible]t put down that—"

"Not no[illegible]Mich'l dissented with deadly coldness. "Where is Nida? Speak fast."

Lane did so.

"She isn't here. The little short* crowned me with a chair, and slipped out. How did I—"

"When? Hurry up!"

"Hardly an hour ago. She walked down the corridor, showed a thick-witted guard my own executive pass, and got away. But I got that guard—"

"Never mind what you did to the guard—"

Suddenly the image of an officer strange to Mich'l stood in the room and saluted smartly.

"Has Captain Ilgen Mr. Lane Mollon's leave to stay?" he asked.

Mollon started forward, but before he could disclose his predicament Mich'l had sidled over to him and thrown one arm affectionately over his shoulder. In his hand, concealed by the rich folds of Lane's robe, Mich'l held his needle-ray, and it was pressed firmly against Lane's ribs.

"Mr. Mollon will be glad to hear you," Mich'l said smoothly.

*Blunker—a blunderer, an oaf. Mechanical recording had preserved the language in much of its original form, but new words did creep in.

*Short—trouble-maker, spitfire. A colloquialism probably growing out of the once frequently used electrical term, "short-circuit."

HE fancied that the eyes of the officer's image dilated slightly, but it lost none of its military rigor. But some explanation of his presence there in his still damp uniform must be given Ilgen, so he growled, in a voice that he tried to make a bit thick, as if he had chewed too much merclite:

"At ease, Captain. At ease! Damn it man, you don't have to be so damned military. You're among friends!" And he towseled Lane's dark hair affectionately.

Captain Ilgen looked his disgust.

"Sir," he said to Lane, "we recaptured Nida Mane as she tried to board a public car near the Executive Mansion."

The black lens at the end of Mich'l's needle-ray pressed hard, and Lane said naturally:

"You have her in custody?"

"Sir, we have." And to Mich'l's dismay, Nida, defiant, her lovely form half revealed by rents in her garments, seemed to materialize beside the officer. Her wrathful eyes were fixed on Lane, and then she saw Mich'l.

The technie put all his will into the pleading stare which he returned, and she understood. She gave no sign of recognition, but favored both Lane and Mich'l equally with the chill of her disdain.

"Sir, what are your orders?"

Lane glanced aside at Mich'l, acutely conscious of the lethal pressure in his ribs.

"'Sall right with me, old fellow," Mich'l squawked good-humoredly. "This your girl that got away from you? Let's both go over and bring her back."

Lane nodded assent. The soldier saluted, and his vision and that of the girl disappeared.

"And we're going to do just that!" Mich'l added in an entirely changed voice. "Get up, you. Act right, speak right, do right, and you may live to see another day."

SO the two left the warren in apparent amity, and walked the beautiful street, with its richly formed, brightly colored arches, its seemingly illimitable vistas, its luxuriant, pampered decorative vegetation, its blazing lights—until at last they came to Administration Circle, and entered the ponderous gates behind which lay the very heart of the Government.

They were challenged at once, Although the officer of the guard knew Lane, usage required the showing of the daily pass. Many high officers of the Government had in years past fallen from grace overnight.

This formality complied with, Lane and Mich'l, the latter with his ray-needle ever ready, sat down to wait in the guard room. And Lane, under Mich'l's quiet prompting, ordered that Nida and her father be brought to him.

"We shall bring the girl, yes," the astonished officer protested, "but not Senator Mane. He is a prisoner of state."

"Perhaps you don't know, Captain," Mich'l suggested smoothly, "that it is not wise to disregard the orders of the Provisional President's son?"

"It would cost me my commission, perhaps my life!" the officer said.

"Neither would be worth much if you disobey!" Mich'l countered, a wire edge creeping into his voice.

The officer looked into Lane's stormy face, then with great reluctance retreated to carry out the order.

In about ten minutes he was back, with four guards and his prisoners. He explained that Captain Ilgen was detained on official duty.

"You may go," said Lane, prompted by a jab in the ribs.

"A written receipt, please, sir, for the senator."

Glowering, Lane wrote out the desired document. At last they were alone.

"Our program," Mich'l announced briskly, "is simple. You will conduct us to one of the Government cars, and will ride with us to such places as we may direct, and I shall release you when it pleases me. If you then want to fight, I will accommodate you."

"I would be willing to fight you, as head of the technies," Lane countered sullenly, "but I wouldn't be bothered with a rebel and a traitor. You've overstepped yourself this time, my fine bolthead, and all I ask is a front seat at your execution."

THEY stepped into the brightly lighted hall, and in that instant Mich'l felt a searing heat on his shoulder. Without a moment's pause he hurled Senator Mane and the girl back into the room. At the same moment he flung an arm around Lane's neck and pulled him back into the doorway, where he could use him as a shield while he cautiously peered out into the corridor. His shoulder throbbed painfully, but his movement had prevented the needle-ray from penetrating deeply in any one place.

A short distance up the corridor was a wider space, in the center of which stood a large bronze urn filled with exotic plants. Behind this urn were several soldiers, and Mich'l recognized the sharp-eyed Captain Ilgen. So that officer had recognized the true state of affairs, or had strong suspicions! But in his haste and eagerness he had overlooked one important fact. In the guardroom were riot-rays, heavy replicas of the ordinary hand weapons. They had not been needed for many years, but the technies had always kept them fully charged and in order.

"Nida!" Mich'l called, not removing his eye from the doorway.

"Yes?" She was standing beside him, and Mich'l thrilled to the admiration and positive affection in her intonation.

"Notice those short tubes mounted on light wheels over against the walls? Those are riot-ray projectors. Wheel me over a couple."

Nida did as directed. Mich'l stuck the stubby muzzle of one of the nearest weapons into the corridor, pulled the lever and swung the ray in an arc toward the ambushed soldiers. There was a sharp crackling noise and the heat chipped myriads of flakes off the stone walls, leaving a gray path across the rich murals, and the air was filled with flying particles. The heat was terrific. It beat back into the doorway.

Captain Ilgen gave a short, sharp order, and he and his men retreated before the bronze urn began to wilt and drip melted metal. He could not be accused of cowardice, for his hand weapons were puny compared to the riot-rays.

"Quick, before he gets in touch with the outer guard!" Mich'l urged his prisoner forward, Senator Mane following. The grave patriarch of rhetoric made a striking picture as he dragged the second riot-ray along. The other one was abandoned, locked with full power on. It was converting that corridor into an inferno, and there would be no pursuit through that avenue.

MICH'L pushed open the metal door suddenly. Two guards on duty were just coming in, their hand weapons ready. They never knew what struck them for there was no time for compunction. But even as their bodies sank to the paving there was the harsh clangor of alarm bells. Soldiers dashed from everywhere and came running, their needle-rays menacing.

"In there!" Mich'l shouted. He pointed to the doors, at the dead guards. As they hesitated, he added:

"Revolution! They're storming the President's office! Hear the rays?"

Through the doors came a faint humming, an acrid smell of heat, of stone and metal fumes. A corporal saluted Mich'l, recognized Lane's haggard features, and Lane again felt that cogent persuader in his ribs.

"That's right, Corporal!" he said bitterly.

"Is the guard room occupied, sir?"

"Not now, you fool!" Mich'l snapped at him. This resolved the last of the corporal's misgivings. Giving an order, he led his men in, gasping.

"Now we'll run!" Mich'l ordered, giving Lane a shove. "Coming, Nida?" She was, dragging her father along joyously. They crossed the broad pedestrian walk, and in the street found an official car nestling on one of the tracks.

"Heave in the riot-ray, will you, old fellow?" Mich'l requested jovially, and Lane did. Then the listless chauffeur turned a controller, and the big car rose a few inches, lightly as a feather, and sped away swiftly through the maze of traffic.

SOMETIME later they were in a service lift; not one of the great public lifts that carried their hundreds at a trip, but one of the small lifts used mostly by the technies, and known to few outside their ranks. Mich'l, standing blissfully close to Nida and her father, enjoyed his moment of relaxation. Many things had been attended to. Lane had been released at last, in one of the catacomb cemeteries. It would take him at least two hours to find his way out. They were discussing the riot-ray, which they had with them.

"I hope we won't have to exhaust it in a fight before we get out," Senator Mane said anxiously. "It would be a splendid weapon if we encounter a hostile environment Outside.

"The Gate is guarded," Mich'l said practically, "but we expect to surprise them. No use worrying."

The lift came to a stop at an airlock. The great elevator shafts were closed by airlocks every 2,000 feet. The reason is obvious. If the air of the great, spheroid subterranean nation were allowed to freely obey the laws of gravity, it would be oppressively dense in the lower levels, and excessively rarified in the upper ones. While the airlocks were operating Mich'l stepped to a telucid and gave the agreed-on signal.

In another half hour they were at 37X. The great, dusty, and little-used storeroom was only poorly lighted; it was dank, and had an uncomfortable chill. Technies and their families were coming in from all sides, and it was not long before some five hundred persons, men, women and children, were assembled. Many of them were pale and frightened looking, for they were staking everything on an ideal, a theory. There would be no coming back. The statute books of Subterranea decreed only one penalty—death—for even the merest tampering with the Frozen Gate. It was not like this that they had visioned the opening of the Gate. Under properly controlled conditions, it would have been possible to open the gate for preliminary explorations. But not now. They were outside the law.

NIDA, standing beside Mich'l, shivered and pulled her overrobe closer around her. There was sadness in her voice as she said:

"These children. . . . They remind me of the thousands of children we must abandon with our people. If I could, I'd steal a few to take with us."

Mich'l grinned without mirth.

"And be damned as a kidnaper of a particularly horrible sort, as long as Subterranea lasts!"

"I know. I know. But what will happen to them all when the automatic machinery fails?"

"They may learn to run it, if they have to. Or if we succeed in estab-

lishing ourselves in the outer world we can tunnel back to them around the Gate in a year or so. Don't worry about them too much. We're taking the big risk, not they."

Gobet Hanlon, accompanied by Flos Entine and Mila Mane, approached. He was loaded down with a huge case of concentrated food.

"I've given orders to bring with us all the cold resisting fabrics we could carry. Got 'em loaded down, eh?"

"All here?"

"Every last one."

"Let's go, then." Mich'l stepped to a small door that led into the main corridor close to the Gate. This door had not been used by the technies when assembling. Through a tiny hole the guard, four soldiers, could be seen about a blanket, tossing sixteen-sided dice. Mich'l opened the door, his needle-ray pointed.

"Don't move, or you burn!" he commanded harshly.

THE guards, taken completely by surprise, did not move. In a few moments they were bound, gagged, and dumped into a corner of 37X. Eager technies were swarming over the complicated mechanism that they had dared to touch, before, only for inspection and maintenance. The Frozen Gate was like a huge stopper in a bottle, made of chromium steel. It was thirty feet in diameter, and thirty feet thick from its well insulated inside face to that enigmatical Outside that had been a grisly mystery to the race for some five hundred centuries.

There was a flash of sparks, and the quiet hum of motors. With a shuddering groan the great plug freed itself from the grip of millenia; turned a few inches in its hole. The supporting gimbals took the load now, and slowly the great mass moved inward, carried by an overhead traveling crane whose track was bolted to the rock roof. The rate of movement was slow, not much over three or four inches a minute.

An excited murmur filled the cavern—almost hysterical joy. But Mich'l, watching that widening margin for the dreaded gush of liquid air, only trembled with relief. At least the calamity that had visited rash Atlantica wou'd not be repeated here.

A young technie, one of the heat distributors, climbed up the heavy bosses on the gateway's face.

"I'm going to be the first to see the Sun!" he shouted joyously. His challenging gaze roved over the waiting crowd, and suddenly his face turned ashen. For at the turn of the corridor, some hundred yards away, he had seen men. No mistaking those uniforms; they were soldiers. And Mich'l, following his gaze, saw a riot-ray being wheeled into place. His own riot-ray already commanded the corridor, but he dared not use it. The soldiers, under the partial protection of the turn, could incinerate the helpless technies with little danger to themselves.

"Wait!" Mich'l shouted, running into the open.

AN officer came to meet him. He then recognized Captain Ilgen, whose exceptional shrewdness had almost undone him before. Ilgen could not see the slow movement of the gate, and Mich'l, himself weaponless, counted only on parleying for time.

They met midway between the two forces, and the small black lens of the captain's weapon pointed steadily at Mich'l's chest.

"Mich'l Ares, I arrest you." It seemed that the captain's fine gray eyes looked out of the lean face with real sympathy. "It may be there will be executive clemency for these people of yours, but for you—"

Mich'l, tense and deadly, saw the captain's vigilant attention leave his face for a second; saw his eyes widen

In consternation. He could not know that Ilgen had seen a slender crescent of green light appear in the Frozen Gate, but he did not lose the opportunity. His fist crashed on the captain's jaw, so that the soldierly figure reeled and the needle-ray fell to the ground. Mich'l leaped after him, picked him up, held him. The riot-ray was turned full on him, and a soldier's hand trembled on the lever. But it did not pull.

"You'll kill him!" Mich'l shouted. And then he ventured to turn his head to look at the Gate. He saw the first of the fugitives struggle into the narrow crack. The gate seemed to have stuck, and there was barely room to pass. Ilgen, half conscious, was trying to rain blows on Mich'l's back, compelling him to stop and pass the officer's hands through the belt of his tunic and to manacle them with a pair of bracelets which he found in his pocket. As he staggered toward the Gate with his burden, he saw Gobet beside him, the stolen riot-ray menacing the soldiers, who would otherwise have rushed in.

SUDDENLY Ilgen struggled upright.

"Fire," he commanded in stentorian tones.

"They'll kill you too, you fool!" Mich'l exclaimed angrily.

"I am a soldier!" Ilgen answered with contempt. His legs barely supported his weight, and he was struggling to free his manacled hands. He threw himself into the narrow crevice of the Gate, to obstruct the stream of fugitives. He started to shout again:

"Fi—" Crack! Again Mich'l's fist caught him. He hooked the officer's elbows over two of the bosses, so that he was supported in plain sight of his men, and turned to urge haste. The last two stragglers were hurrying through, and with relief Mich'l turned to follow. But he set the closing mechanism in motion before he leaped for the narrow opening that was becoming still narrower, though very slowly. Now for that green crescent of light, and hope!

He felt a wave of heat. Glancing back, he saw the irresolute guards scattered by the enraged charge of a square, blocky man in civilian robe—the usually smiling Provisional President, Senator Mollon. Mollon himself was fumbling with the lever of the riot-ray. Ilgen had evidently reported where he was going before starting in pursuit of the technies.

Again that withering flash of heat, and Mich'l saw Captain Ilgen, still semi-conscious, suddenly turn red-faced. Mollon would burn him up without compunction, in the hope of catching one of the fugitive technies. And now a figure in uniform leaped forward at Mollon's angry gesture, and bent purposefully to the sighting tube.

The crescent was now so slender that Mich'l had to turn sideways to squeeze back into the corridor. And slowly, inexorably, it was growing smaller still. With desperate haste the practiced, uniformed man was adjusting his range.

Captain Ilgen struggled when Mich'l seized him.

"I arrest—"

Mich'l thought for a sickening moment that he was caught in the closing gate. Then he was free in the cylindrical tunnel into which the plug was creeping. Luckily Ilgen was slight. His body squeezed through with little more difficulty than Mich'l's own. Now the opening was too small for any man's body. A red glow illuminated that narrowing slit; an acrid wave of heat, and the smell of burnt metal came with the strong current of air that blew out of Subterranea.

MICH'L dragged his captive down the rocky tunnel, the floor of which dipped gently away

from the Gate; for drainage, no doubt. Around a bend, the source of the greenish light was apparent. The fugitives were in an ice cavern. The light seemed to emanate from roof and walls. The air was uncompromisingly chill, for the blast of warm air from Subterranea had stopped.

But the cold of the air was nothing to the icy chill that settled on the heart of Mich'l Ares, and the hearts of Senator Mane, and the other leaders of this desperate enterprise. So this, this was the Outside! A cavern of ice—small, hemmed-in! Those ancient folk-legends of a Sun—

"I arrest you, Mich'l Ares!"

Mich'l laughed shortly. What a single-minded fellow this Captain Ilgen was! Still groggy, of course. Didn't know where they were. He left the soldier with the red, blistered face.

"Mich'l! Mich'l!" a voice echoed shrilly from the ice walls. It was a high-pitched voice, and an excited one. A boy came flying out of a narrow crevice, his short robe flying, his cloth-wrapped legs twinkling.

"Mich'l!" he shouted, "I saw it! I saw the Sun, the beautiful Sun!"

Lucky it was that in the rush no one was hurt. The small cleft opened into a wide tunnel, a low-roofed cave through which milky-white water flowed. The cave opened upon a vista of blue sky and towering mountains whose tops were burdened with snow and upon whose sides glaciers slid down and melted; and the milky-white stream brawled down into a green valley, far, far below. On a mountain meadow, not far from the glacier that still buried the Frozen Gate, they rested. . . .

AND so came a new strain of humanity upon the surface of the earth—a strain tempered and refined by the inexorable process of evolution and environment. Already animal life had reappeared, drastically changed and ruthlessly weeded out by the most severe Ice Age the world had ever known, and now Man stood once more on a new threshold of time.

Something of this may have passed through the minds of the refugees luxuriating in the strong sunlight of this mountain meadow, and in active and alert brains the foundations of a new civilization were already being built.

They were preparing to go into the valley below when there was a dull concussion. The glacier over the Frozen Gate rose slightly, then disappeared completely out of sight, leaving a yawning hole in the mountainside. Ice and rocks slid down, filling the hole. The refugees gazed at the scene in fear and wonder.

"They have blown up the gate! And the chambers leading to it!" Senator Mane—now only Leo Mane—said slowly. "There goes our last chance to save them!" His tones were deeply sad. He could not look upon these people as an experiment that Nature had abandoned, although he knew that history is thronged with the shadows of vanished races, culled by the process of natural selection.

But Youth looks only ahead. The majority of the rescued technies were young, and with eagerness and anticipation, they followed Mich'l and Nida Ares down into the valley to build their first homes.

The Midget From the Island

A COMPLETE NOVELETTE

By H. G. Winter

"For God's sake, Hagendorff, what's come over you!"

IN the chill of an early morning, a rowboat drifted aimlessly down the Detroit River. It seemed to have broken loose from its mooring and been swept away; its outboard motor was silent and it swung in slow circles as the currents caught at it. But the boat carried a passenger. A man's nude body stretched face downward in it.

It was a startling figure that lay there. The body was fully matured and had a splendid development of rounded muscles—and yet it was not more than

Garth Howard, prey to half the animals of the forest, fights valiantly to regain his lost five feet of size.

three feet in length. A perfectly formed and proportioned manikin! The two officers in the harbor police launch which presently slid alongside to investigate were giants in comparison.

They had not expected to find such weird cargo in a drifting rowboat. They stared at the naked, unconscious midget in utter amazement, as if seeing a thing that could not be real. And when one of them reached down to lift the tiny body aboard, his eyes went wider with added surprise. His lift was inadequate. The dwarf's weight was that of a normal-sized man!

This was mystery on mystery. But they got the uncannily heavy figure aboard at last and ascertained

that, though the skin showed many wounds and was blue from long exposure, the heart was still beating. And realising that the life might flicker out beneath their eyes unless they took action immediately, they proceeded to work over him.

After some minutes, the dwarf gave signs of returning consciousness. His lids fluttered and opened, disclosing eyes that filled suddenly with terror as they stared into the faces, huge in comparison, that leaned over his. One of the officers said reassuringly:

"You're all right, buddy: you're on a harbor police launch. But who in the devil are you? D'you speak English? Where'd you come from?"

THE midget struggled to speak; struggled desperately to tell something of great importance. They bent closer. Gasping, high-pitched words came to their ears, and the story that those words told held them spellbound. When the shrill voice ceased and the dwarf sank back into the coat they had thrown around him, the two policemen gazed at each other. One whistled softly, and his companion said soberly:

"We'd better phone up and have the local police tend to this right away, Bill."

Thus, two hours later, several miles up the river, another launch containing three officers came to its destination, a solitary, thickly-wooded island that brooded under a cloak of silence where the river leaves broad Lake St. Clair. The launch crept up to a mooring post a few feet from a small, rough beach, and was tied there. Quickly, the men waded ashore and tiptoed up a winding trail that was barred from the sun by dank foliage. They soon came to a clearing where a large cabin had been built. There, one of them whispered, "Guns out!"

Then the three men crossed the clearing and cautiously entered the cabin.

For a moment there was silence. Then came a terrified shout, followed by the bunched thunder of a succession of pistol shots. The reverberations slowly died away, and some time later the policemen reappeared and stood outside the door.

One of them, dazed, kept repeating over and over, "I wouldn't have believed it! I wouldn't have believed it!" and another nodded in wordless agreement. The third, white-faced, stared for a long time unseeingly at the cloud-flecked bowl of the sky. . . .

But it would be best, perhaps, to tell the story as it happened.

THE incredible events that shaped it began two nights before, when the larger of the two rooms in the island cabin was bathed in the bald glare of a strong floodlight that threw into sharp prominence the intent features of two men in the room, and the complicated details of the strange equipment around them.

Garth Howard, the younger of the two, was holding a tiny, squawling, spitting thing, not more than three inches long, which might have seemed, at a quick glance, to have been a normal enough kitten. Closer inspection, however, would have revealed that it had a thick, smooth coat, a lithe, fully developed body and narrowed, venomous eyes—things which no week-old kitten ever possessed. It was a mature cat, but in the size of a kitten.

Howard's level gray eyes were held fascinated by it. When he spoke, his words were hushed and almost reverent.

"Perfect, Hagendorff!" he said. "Not a flaw!"

"The reduction has not improved her temper," Hagendorff articulated precisely. His deep voice matched the rest of him. Garth Howard's

clean-muscled body stood a good six feet off the floor, yet the other topped him by inches. And his face compared well with his bulky body, for his head was massive, with overhanging brows and a shaggy mop of blond hair. Athlete and weight-lifter, the two looked, but in reality they were scientist and assistant, working together for a common end.

THE room in which they stood was obviously a laboratory. Bulky gas engines and a generator squatted at one end; tables held racks of tools and loops of insulated wiring and jars of various chemicals. One long table stretched the whole length of the room, placed flush against the left wall, whose rough planking was broken by a lone window. There were racks of test tubes on this table, and tools, carelessly scattered by men intent on their work.

Still another table was devoted to several cages, containing the usual martyrs of experimental science: guinea pigs and rabbits, rats and white mice. Beside these was a large box, screen topped, in which, in separate partitions, were a variety of insects: beetles and flies and spiders and tarantulas.

But the thing that dominated the laboratory was the machine on the long table against the wall. Its chamber, the most striking feature, was a cube of roughly six feet, built of dull material resembling bakelite. Wires trailed through it from the glittering plate, which was the chamber's floor, and a curved spray-shaped projector overhead, to an intricately constructed apparatus studded with vacuum tubes. A small switchboard stood beside the chamber, and from it thick cables led to the generator in the rear of the room.

"Let us return her to normal," Hagendorff rumbled after a moment or two devoted to prodding and examining the diminutive cat. "Then for the final experiment."

One whole wall of the cubical chamber was a hinged door, with a tier of several peep-holes. Garth Howard swung the door open, placed the tiny, struggling cat inside and quickly closed it again. "Right," he said briefly, and pressed his eyes to the bottom peep-hole.

A SWITCH was pulled over, and the dynamo's drone pulsed through the room. Hagendorff's fingers rested on a large lever that jutted from the switchboard. Slowly, he pulled it to one side.

The imprisoned cat, small as a rat, had been nervously whipping its tail from side to side and meowing plaintively; but, as the lever swung over, there came a change. The vacuum tubes behind the switchboard glowed green; a bright white ray poured from the spray in the chamber, making the metal plate below a shimmering, almost molten thing. The animal's legs suddenly braced on it; its narrowed eyes widened, glazing weirdly, while the tail became a stiff, bristling ramrod. And, as a balloon swells from a strong breath, the cat's body increased in size. It grew not in spurts, but with a smooth, flowing rhythm: grew as easily as a flower unfolding beneath the sun.

In only a few seconds its original size was attained. Howard raised his hand; the lever shot back and the white beam faded into nothingness. A full sized and very angry cat tore around the inside of the chamber.

"Normal?" Hagendorff questioned. The other nodded and prepared to open the door.

"Wait! She always was a little undersized; I give her a few inches more as a reward."

"Not too much," warned Garth. "She's got a nasty temper: we

don't want a wildcat prowling round here!"

The white beam flashed, the tubes glowed and almost instantly flickered off again. When the chamber's door was opened, an indignant and slightly oversized cat bounded through, leaped from the table with a squawled oath of hatred and streaked into the front room of the cabin.

GARTH turned and faced Hagendorff, a smile on his lips and a gleam in his eyes. He ran his fingers through his black hair.

"Well," he said, "now it's time for the final experiment. Who shall it be?"

Hagendorff did not answer at once, and the American went on:

"I think it'd better be me. There's a slight risk, of course, and I, as the inventor, could never ask an assistant to do anything I wouldn't. Is it all right with you?"

Hagendorff nodded quickly in answer. Garth stood reflecting for a moment.

"Guinea pigs, rabbits and insects have survived reduction to one-twentieth normal size," he said slowly. "It should be safe for the human body to descend just as far. But stop me at about two feet this first time. I'm not taking any chances; I want to be alive and kicking when I announce the success of my experiments to the scientific world."

His assistant said nothing.

"Well, here goes," Garth added. "I'd better take off my clothes if I don't want to be buried in them. They're not affected by the process. Must be because of the lack of organic connection between their fibers and the human body."

A few minutes later, nude, he jumped onto the laboratory table. He presented a perfect specimen of well-developed manhood as he stood before the door of the chamber. His smooth skin, under which the rounded muscles rolled easily, gleamed white beneath the glare of the floodlight. His gray eyes glanced at the stolid assistant, who already had one hand on the switchboard's lever. Garth saw that the hand was trembling slightly, and smiled as he realized Hagendorff was as excited as he. He said:

"I'll leave the door ajar, so you can more easily watch every phase of the reduction. If it's painful—well, I guess I can stand anything a cat can!"

Then, stooping slightly, Garth stepped in and drew the door almost shut.

HE relaxed as much as possible from the tremendous excitement that filled him, and nodded at Hagendorff.

"I'm ready," he said. "Go ahead!"

The ray came to his body as the crash of thunder comes to the ear. His nerves leaped as it struck and enveloped him. He felt as if he were entombed in ice, and yet his veins were aflame. Fiery shafts fanged him all through and resolved, presently, into a measured, tingling beat.

His thoughts raced. He knew that those minute particles of matter, the atoms of his body, were being compacted; he sensed that his legs were rigid, his body stiff, his eyes clamped ahead in a glazed stare. He was only half-conscious of the objects outside, but the dim sight of them was fantastic and nauseous.

There was Hagendorff's face peering in at him—growing! Swelling as the cat's body had swollen; and yet receding and rising until Garth, momentarily forgetting that he was the one whose size was changing, thought that the man's titanic body would fill the room. But the room was growing, too: the stools were becoming leviathans of wood, the walls were like cliffs, the compact

switchboard was a large surface of black, and the chamber in which he stood grew into a high-roofed vault, its sides shooting up and retreating as if shoved by invisible hands.

And still he sank, and still the terrible light devoured him.

Suddenly a delirious sensation engulfed him; his senses went reeling away, and he staggered. Then with a wrench he came to. As he regained control of his mind he knew the lever had been switched off and the process completed.

He found that he was gasping. He passed a hand over his sweat-studded face and looked around.

OUTSIDE was the room of a giant. And in a moment a giant became visible. His vast bulk filled the chamber's doorway; his mammoth face peered in. Garth's eardrums quivered from a deep bass rumble, sounding like thunder on a distant horizon.

"Are you all right, Howard?"

A finger half the length of his own arm reached forward and prodded him. For a second Garth could do nothing but stare at it. It brought home to him starkly the puny size of his body, only two feet in height. He felt suddenly afraid. But that was foolish, he thought; and he laughed, his voice ludicrously high and shrill.

"I'm all right," he cried. "But I can hardly understand you. If I were much smaller, I probably couldn't—your voice'd seem so deep. Gangway, Hagendorff, I'm coming out!"

His eyes were just below the level of the giant's shoulders. He stepped from the black chamber and stared amazedly at the room, at the chairs, the objects in it—at the laboratory table on which he was standing, along which he might have sprinted thirty yards. A surge of exultant animal spirits flowed through him. His dream had become a reality; the machine had passed its last test! His body was sound and whole; he felt perfectly natural; he had not changed, save in size; and in size he was like Gulliver, confronted with a Brobdingnagian room!

He hurdled a five-inch-high box of tools, ran down the creaking table and stood laughing in front of a rack of test tubes half as high as he was. Three strides took Hagendorff opposite him; and from above the thunderous voice rumbled:

"What were your sensations?"

"Probably as close as man'll ever get to the feelings of a spark of electricity!" the midget replied. "But bearable, though I was freezing and burning at the same time. My body was rigid, paralyzed—just like the animals we used. I couldn't move."

"You're sure you couldn't move? You were helpless?"

THE booming voice throbbed with sudden interest. Garth looked up curiously. "No," he repeated, "I couldn't move. But lift me down, Hagendorff. I want to take a walk on the floor."

A hand wrapped around his body, tensed and strained upwards. The two-foot-high man was not quite pulled off the table. Then Hagendorff grunted and relaxed his grasp.

"I had forgotten," he rumbled. "Your weight remains the same. You are one-third my size, yet you weigh almost as much as I do. Weight, which is the sum of the mass of all the atoms in you, is not, naturally, affected by compacting those atoms."

It was only by a great effort that he was able to deposit the manikin on the floor.

For a while Garth strolled around, savoring to their full the fantastic sensations his diminished stature gave him, at once amused and somehow frightened by the overwhelm-

ing size of the laboratory. To his eyes, the tables were like bridges; Hagendorff's broad figure loomed monstrously over him, and the guinea pigs and rabbits in their cages seemed as big as fair-sized dogs. With a grin, he looked up at the giant who was his assistant.

"Think I'll make the return trip, and give you a chance," he said. "I've had my share, and the process has been proven. It's weird, being down in this new world all alone. I'd hate to think what would happen if a rat came along!"

Silently, Hagendorff stooped and grasped him again. But Garth, when he stood once more inside the chamber, regarded his huge, rough-moulded face curiously.

"Say," he said, puzzled, "your hands are trembling like the devil! What's wrong? You're more nervous than I am!"

Hagendorff did not answer. He advanced to the switchboard. His narrowed, deep-set eyes shot a quick glance at the small, nude man inside the chamber, and for a second one hand hovered over the lever on the panel.

IN that tense second a flash of intuition, of deadly fear, came to Garth Howard, and he leaped wildly forward. But his rear foot did not leave the floor of the chamber, and his shout of alarm was choked midway. Again the fierce ray paralyzed every muscle in him, and he was locked motionless where he was.

Helplessly, his glazed eyes stared at Hagendorff, while every moment his rigid little body melted downwards. He was becoming rapidly smaller, not larger!

Through the agony of the stabbing electrical waves, in vain Garth tried to wrench his legs free. The few inches that separated him from the door were an impassable barrier. Sheer panic clutched him. He was trapped. But why? Why had Hagendorff tricked him?

As if reading the question, the giant outside came close to the chamber's door and regarded his captive with eyes that were lit by a peculiar flame. He grunted, then reached backward and returned the switchboard lever almost to the neutral point, reducing the speed of the decreasing process.

"Yes, that is better," the German gloated, in a deep, satisfied tone. "It will be slower, now. Slower—and more interesting to watch! . . . I fancy your eyes are reproachful, my friend. Why have I done it, you wonder? *Ach!* This machine, it will startle the world of science; it will make its inventor famous—not? Yes; and did you think I was going to stand by and see all the credit go to you? No! To me it shall go—me alone! And you—" He chuckled and rubbed his hands before going on.

"You shall be what the newspapers call a martyr to science. You shall sink to a foot, to six inches—to one inch—even less, I think! Eventually the reduction will kill you, of course; and your body shall be proof of how you died—in an experiment—and shall also prove the machine's power and my genius!"

HE laughed thunderously, a blond and malevolent titan. He did not notice that, with the lessening of the reduction's speed, a slight trace of control over his muscles had returned to the midget inside. His tiny body was slowly diminishing, and complete, hopeless paralysis and death was not far away. But Garth was fighting every second, fighting desperately with the trace of strength he possessed to slide to the door, break the contact and get out from under the ray's remorseless influence. Almost imperceptibly, the effort la-

cerating him with pain, he slid his feet forward. Hagendorff talked on. He semed to be blinded by the vision of the fame his treachery would bring him.

"We shall have an experiment, my Professor; and then you will have an interesting death! The ray will suck you down; you will crumple and crumple till you're not much bigger than my thumbnail! And then I shall—*ah!*"

Garth had torn loose. Calling on every ounce of strength and will, the midget, now no more than one foot high, had reached the edge of the floor plate and pitched out onto the long laboratory table.

Giant and dwarf faced each other. For a moment, neither spoke or moved. A breathless tensity hung over the laboratory. The machine droned on, forgotten. From outside, startingly near, came the eery hoot of an owl.

A tight smile broke through the angry surprise on Hagendorff's face. "Well, well!" he said, with gargantuan, macabre humor. "We object! It was foolish, eh, to reduce the power? Next time, it shall not be so. We—*object!*"

With the word, he lunged, and his bulky arms lashed down in a wide, grasping sweep.

But Garth's taut muscles, retaining all the strength and vigor of their normal size had been awaiting just such a move, and his tiny body described the arc of a tremendous leap that neatly vaulted one huge arm and started him sprinting swiftly down the table.

AT the end he wheeled, and before the other overcame his surprise at such a nimble retreat, burst out indignantly:

"For God's sake, Hagendorff, what's come over you? Be sensible! You can't do this; you can't really mean it! Why—"

"So!" roared the assistant, and his rush cut short the midget's shrill, frantic words. But his grasp this time was better judged; Garth felt the great fingers slip over his body. Remembering his strength, he lashed out at one with all his might. Hagendorff grunted with pain; but instead of continuing the attack, he suddenly turned and strode to the door leading into the other room, and closed it with a bang.

"You cannot escape," he growled, advancing again; "you merely delay."

Panting, Garth glanced around the room. He was, in truth, trapped. There was but the one door; and even if he could reach it, he could not get it open, for the handle would be far above him. The room was a sealed arena. For a little while it would go on—a wild leaping and dodging on the table, a hopeless evading of mammoth hands . . . and then, inevitably, would come a crushing grip on his body, followed by experimentation and the agony of death in the black chamber.

Fearful, he waited, a perfect, living statuette, twelve inches high....

A grunt preluded the giant's vicious charge. The American staggered from the brush of a sweeping hand; then, twisting mightily, he dove under it, like a mouse slipping under the paw of a cat. In doing so he fell sprawling; and though he was up in a moment, his arm was held. A hoarse, exultant rumble came to his ears.

"Caught, my friend!"

But Hagendorff spoke too soon. With a great wrench, Garth broke free, and made a tigerish dash back along the table toward the window. And even as the clumsy titan jumped to the side and grabbed again at him, he hurled his tiny, heavy body against the pane, and went plunging through a shower of glass into the cool dark night outside.

HE fell five feet, and the wind was jarred out of him as he crashed through the branches of a bush under the window into the sodden earth beneath. Unhurt, save for a few lacerations from the glass, he staggered to his feet, gasping for his breath, and started to run across the clearing towards the fringe of dense forest growth that ringed the cabin.

Then he heard thunderous footsteps, and, a second later, the sound of the front door being pulled open. Garth turned in his tracks, and stumbled back beneath the cabin, thanking heaven that it was raised on short stilts. But the ruse did not give him much of a start, and by the time he had painfully threaded his way between the piles of timber left underneath the cabin, Hagendorff had discovered the trick and was scouting back.

Then, with the strength of the hunted, Garth was out from under the other side and sprinting for the doubtful sanctuary of the forest.

His tiny feet, carrying the weight of a normal-sized man, sank ankle high into the muddy ground, several times almost tripping him. Even as he got to where a trail through the bush began, and passed from the cold starlight into spaces black with clustered shadows, he heard a bellow from behind, and, glancing back, saw a monstrous shape come leaping on his tracks.

He had only seconds in which to find refuge: he could not stick to the trail. Thick bush, dank and heavy from recent rains, was on either side, fugitive streaks of pale light from above painting it eerily. Garth plunged into the matted growth, dropped to hands and knees and wormed forward away from the trail. Earth-jarring footbeats sounded close. With frantic haste he wrenched through the scratching tendrils and came to a miniature clearing.

HE saw the tilted shape of a rotted tree-stump, its roots half washed away and exposing a narrow crevice between them. Gasping, the nude, foot-high figure tumbled down into it, and lay there, trying to hush his labored breathing.

He was a mere twenty feet from the trail; and though to him the bush was a jungle, to his pursuer it was only chest-high. A towering shadow moved along the trail. The thud of heavy footbeats came more slowly to the listening midget. Hagendorff was searching, puzzled by the vague shadows, for where Garth had left the path.

Silence fell.

Garth's heart was pounding like a trip-hammer. He held himself alert, ready, if need be, to struggle up from the moist crevice and dart on further into the bush. He could not see the giant, but could picture his huge, sullen face all too clearly. Still no sound came. Risking all, he gripped a root and hauled himself up slightly. Then he peered around the stump.

Hagendorff was standing in the thick of the bush. He was not ten feet away, striving in the gloom to discern the other's tell-tale tracks. Garth drew his head back, hardly daring to breathe. Shivering, his naked body miserably cold, he waited, pressed down in the soggy earth. His betraying tracks were there; the shadows alone befriended him.

The silence was drawn so fine that the faint cheep of a night-bird sounded startlingly loud. But then came thunder that sent the bird winging away in fright, and the night and the forest echoed with the roar of a wrathful, impatient human voice.

"You hear me, wherever you are! And hear this: I leave you now, but in ten minutes I have you! You little fool—you think you can

get free? It is only by minutes you delay me!"

Snarling a curse, the treacherous giant turned and crashed through the bush and took his huge form striding back towards the cabin.

GARTH was thinking of many things as he scrambled back wearily from his refuge to the trail. He was cursing the unwanted publicity which prying reporters had given his work in Detroit, and which had led him to lease the lonely island and build a laboratory in the wilderness. Had it not been for that publicity, he would never have needed an assistant, and the vision of fame would never have come to delude Hagendorff and turn his thoughts towards murder.

His position seemed a horrible delirium from which he must presently awake. Naked, dwarfed by each ordinary forest weed, unarmed, and trembling from the wind-sharpened night, he hardly knew which way to turn. His body was blotched with blood and mud, and under it the ragged gashes made by glass and bush stung painfully; he was hungry and stiff and tired and miserable. He remembered Hagendorff's threat of capturing him in ten minutes, and forced a smile to his face.

"Looks kind of bad," he muttered, using his voice in an attempt to dispel some of the lonely grip of the night, "but we'll keep moving, anyway! He's coming back soon. Let's see: I'd better make for the stream. It'll be hard for him to follow my tracks through that. And then. . . ."

Then—what? The island was small. He realized he could not stand many hours of exposure. Inevitably— But he turned his mind from the future and its seeming hopelessness, and concentrated on the immediate need, which was to hide himself. Forcing the pace, he struck off on a shambling trot down the dim trail, on into the deepening, sinister shadows towards the island's lone stream.

OBSTACLES that normally he would not have noticed made his path tortuous. His great weight sank his feet ankle-high in the moist, uneven ground. Time and time again he stumbled over some imbedded rock that, potato-sized, was like a boulder to him. Time and time again he fell, and when he rose his legs were plastered with soggy earth that did not dry; and the damp, fallen leaves and twigs he pitched into clung to his coating of mud. Each broken limb and branch, dropped from the whispering gloom of the trees above, drained the energy from his tiring muscles. Soon he was conscious of a vague numbness creeping over him, a deceptive, drowsy warmth into which he longed to sink, but which he drove back by working his arms and legs as vigorously as he could.

On he went, with teeth clenched and eyes fixed on the half-seen trail ahead—a fantastic, tiny creature hunted like a wild animal by a giant of his own kind!

Presently, through the shroud of darkness traced by ghostly slivers of starlight, came the sound of trickling water. The trail rose, dipped down; and through that hollow crawled the stream, winding from a hidden spring to the encompassing river below. Garth was winded when he came to it; to his eyes it seemed a small river. His legs were so numb they hardly felt the cold bite of the water that lapped around them.

Some furry water animal leaped away as Garth trudged upstream; alarmed by the strange midnight visitant and the self-encouraging mutterings of a shrill human voice. . . .

HE had waded what seemed to him a weary distance—in reality only a few hundred yards—through the winding, icy creek, when suddenly he halted and stood stock-still. Listening, he heard the ordinary sounds of the wind through the fir-spires, and the slow trickle of water; heard the beating of his own heart. Nothing else. And yet. . He took another step.

Then he swung quickly around and peered back, senses alert. There was no mistaking the sound that had come again. It was the crunch of heavy feet, thudding at even intervals on damp earth. They were Hagendorff's; and he was armed with light!

A long beam of white speared through the tangle of bush and tree trunks far below. It came slanting down from above, prying for the story recorded by miniature footprints in the ground. By its distance from him, Garth could tell Hagendorff had come to where his trail led into the stream. The ray held steady for minutes. Again it prowled nervously around, hunting for tell-tale signs, sweeping in widening circles. Then, it was punctuated by the crunch of a boot.

The giant was following upstream!

With the flashlight, he might even be able to trace the prints in the bed of the creek. Stooping, Garth crept ahead, as silently as he could, though the stir of water at his feet seemed terribly loud. There were keen ears behind, craned for sounds like that. He knew he would have to hide again—quickly—and at that moment he saw a place.

A cleft in the bank to his right held a small hole, dimly limned by a wisp of starlight. On hands and feet the midget scrambled catlike to it. It slanted down and inwards, only inches wide, so that the earth was close to his body when he slid feet-first inside. But it was warm and dry, for it was shielded by a ledge from rain, and with the warmth the hunted manikin's spirits rose somewhat. The ray of light, which he could see sweeping back and forth downstream, was still following slowly, as if Hagendorff were having trouble making out the water-covered trail. Garth breathed easier, cuddled down—and then, for some unaccountable reason, he felt uneasy.

HE had not noticed it at first, but now his nostrils were filled with a queer, musky odor that electrified his nerves and tensed his muscles. He felt the short hairs on his neck rise; felt his lips tighten and draw back over clenched teeth. Some long-buried instinct was warning him of danger—and suddenly he sprang from the hole and swung around.

From it, a killer came snaking out, its bared fangs thirsty for his life blood!

Arching and swaying its lithe-muscled body, it slid forward in its graceful, savage way—a weasel, the deadliest pound-for-pound killer that prowls the forest. It was as long as the naked human who faced it was tall. Unwittingly, he had chosen its hole as a refuge.

Retreat would have been impossible, but Garth for some reason did not even think of it. A strange new sensation poured through his tense body, a sensation akin to fierce joy. Gone was his tiredness; his teeth too were bared, matching the wicked fangs before him. Two primal creatures they were, tooth to tooth and claw to claw, the man as naked and intoxicated with the blood lust as the ten pounds of bone and sinew that now darted suddenly for his throat.

With the lightning quickness that had come to him with small size, Garth stepped aside. And as the weasel's head streaked by he called

on man's distinctive weapon, and put every ounce of his weight behind a right arm swing that landed square on a cold black nose and doubled the weasel back in mid-air.

Stunned, it writhed for a second on the slippery bank; and then again it was up, mad with pain now and swaying slightly as it gathered for a second leap against this creature that fought so strangely.

BUT in the momentary respite Garth had reasoned out his best chance. He did not try to fight off the second dart with his fists, but went boldly in. Ducking through the needle claws with head lowered, his tiny hands streaked in on the furry throat. He found it, and his fingers thumbed into the wind-pipe; but not before the weasel smelled the blood its claws had drawn and went utterly berserk. For a moment there was a wild flurry of furry, tearing legs and a blood-streaked white body between them, trying desperately to evade their slicing strokes. They pitched down the bank together, animal and man struggling silently to the death; and when they jarred to a stop in the water below, Garth's strategy was achieved.

He was uppermost; his grip was steel around the throbbing throat, and the hundred and eighty pound weight of his body was holding the legs powerless. Not an inch from his face the weasel's fangs clashed frantically together. Garth maintained his clutch, squeezing with every bit of his mighty strength. The animal shuddered; then writhed in the death convulsions; at last lay still.

Panting, his mind a welter of primate emotions roused by the kill, the man shook it a last time, jumped to his feet and glared around—to see the beam of a flashlight only a dozen yards away. His more deadly foe, the human foe, was upon him. Perhaps the sounds of the fight had reached his ears.

Garth lost not a moment. Quickly he slung the weasel's body back into the hole and jammed himself down after it.

HAGENDORFF approached slowly, mumbling and cursing to himself in sullen ill-humor. Things were not going as he had expected them to. The white ray scoured the banks of the stream, searching doggedly. Nearer he came, and with each step the watching midget's rapid breathing grew tighter. The towering body was more than shadow now. Another ten feet and the flashlight would find the marks of the fight.

But the titan's patience gave out. Closer than he had yet been to his quarry, he paused, and again the thunder of his voice broke the night's hush.

"Bah! This is foolish! In daylight I find him certainly. I have waited long; I can wait a little more. I need sleep. To-morrow, it will be different!"

He swung away from the stream, and in a few minutes the rip and crash of his progress through the bush had died. In the silence, Garth Howard considered his situation.

He faced it squarely, as was his custom. He did not brood over the treachery of his assistant, or of how unfairly and suddenly it had plunged him into peril and robbed him of his normal body. He accepted his position and searched for possible angles of escape. There were not many hours left in which to make a decisive move. The island was small, and, as Hagendorff had said, discovery would be inevitable in daytime.

Garth thought of the machine, and of the giant sleeping. A desperate plan came to him, and his jaws set decisively. "I'll do it!" he exclaimed aloud.

The lever which controlled both increase and decrease could be worked from inside the chamber if he rigged up a system of turning it with a wire or rope. If he pulled it to the increase only part way, he would, he knew, have sufficient power over his muscles to pull it back off, or slide again from the chamber, as he had done before. Whether or not he could do this depended on Hagendorff's being asleep. Possibly he could be locked in the living room, if he were there. Or tied. The increase, even at half speed, would only take about forty seconds. Once back to his size there would be a fight without odds, Garth thought grimly.

IT was a big risk, and there was probably only a small chance of succeeding, but it meant getting back to six feet, back to a normal world, back to equal terms. That was the magnet which drew him presently toward the cabin laboratory.

He went slowly, to allow Hagendorff plenty of time to fall soundly asleep. The giant, as he had said, needed sleep—needed it badly—for, like Garth Howard, he had done without it for forty-eight hours under the excitement of imminent success in their work. Garth considered that his move would be totally unexpected, being made right into the other's territory. There was a chance.

And so, cold and weariness banished by thoughts of the goal ahead, he prowled back along the trail like any small creature of the forest.

It was half an hour later when he came in sight of the cabin. His heart drummed excitedly as he stood in the shadows surveying it. He wondered if Hagendorff was still awake; if he was, perhaps waiting for him. Certainly he did not seem to be: the cabin was dark and silent, and the only door was tightly closed. Still—it might be wiser to retreat while still free....

"No, by heaven!" Garth Howard exclaimed in his thoughts. "I'm going through with it!" Stooping slightly, he left the shadows and ran boldly into the starlight.

He half expected to hear a scuffle of feet and see the giant come leaping out at him; but nothing broke the silence. He made his careful way along the side of the cabin to the place where a trough for waste liquids led through a small hole at the level of the floor, and with great care wormed through.

AS he started to cautiously reconnoiter, he was suddenly arrested in his tracks. He had caught the sound of deep, rhythmic breathing. Hagendorff was asleep, not in the adjoining living room—but in the laboratory!

For a moment, Garth did not know what to do. Caution urged him to retreat; but that would not get him back to his size. On tiptoe, he explored around. The boards squeaked beneath his great weight, but the nearby breathing beyond continued in regular rhythm.

His eyes were toned to the darkness of the laboratory; he saw the chamber of his atom-compacting machine, its outer sides ghostly in the faint, reflected starlight, and stared at it with a pang of fierce longing. So near, it was—so very near! Holding the stolen size of his body; holding all that was vital to him; holding life itself—it rested there silently, within reach of a few steps and a quick climb up one of the table legs. So he thought, his brain whirling with mingled emotions, his tiny body shivering and aching with cold and its many hurts. The machine was near—but a barrier blocked the way.

Hagendorff's bulk lay outstretched on a side table, black in the shadows, and from him came the level

breathing of a sound sleeper, climaxed now and again by a rumbling snore. He was taking no chances; his presence there seemed to destroy any hope of the midget's regaining normal size. But Garth was desperate, and for a minute or so he considered.

FORTY seconds, the increase would take, at half speed. It might be that long before the giant would waken thoroughly and see what was happening. He, Garth, might start the process, and, when he saw the huge figure stirring and waking from the noise of the dynamo, switch off the ray and get out. No matter how short a time it took Hagendorff to throw off the fogginess of his sleep, he would be somewhat increased in size, and the odds of combat would not be so great.

It was a terrible risk. Did he dare take it? He thought of the forest, of the raw night, of what was threatened in the morning.... Yes!

Silently, the manikin clasped the nearest table leg, shinnied up and hauled himself over the top. As he got there his heart leaped. A sharp thumping had come from behind. He dropped to his knees and glanced round; but he immediately rose again, reassured. It was only the rabbits in their cage, disturbed by the strange figure on the table. He thanked God that they—and his tarantulas and other insects—could make no alarming noises.

Garth found a long strand of wire. The panel's control lever, swung to the left, controlled increase; to the right, decrease. Garth's plan was to wind the middle of the wire around it, relay each end around the two supporting posts of the switchboard, and thus have both ends of the wire in his hands when he stood inside the chamber. One end of the wire would enable him to pull the lever over for increase, and the other to pull it back to neutral when the increase was completed, or when Hagendorff arose.

Quickly he started to arrange the wire. Then suddenly his hands dropped and he stared dismayed at the control panel.

The power switch had been removed!

IT was Hagendorff's work, of course. He had guarded every angle. Without that switch, the mechanism was lifeless and literally powerless. It worked on a delicately adjusted and enclosed rheostat; there was nothing that could be substituted for it. It would take hours to improvise one in the heart of the apparatus.

The switch, Garth reflected bitterly, was probably concealed somewhere about the giant's body.

He considered the possibility of tying him. He knew where there was a coil of light, pliable wire on the floor; he might be able to loop it over the giant's hands and legs while he slept, tie him securely, and then go through his pockets for the switch. Another hazard! But there was nothing else to do.

Garth lowered himself over the table's edge and slid quietly down the leg. He glanced at the sleeping man, then over across the room to where, beneath another table, the wire was—and his nerves jumped at what he saw there.

From the darkness under the table two spots of greenish fire, close to the floor, held steadily on him.

As he stared, they vanished, to reappear more to the right. With the movement, he glimpsed the outline of a lithe, crouching animal, and knew it to be the cat he and Hagendorff had experimented on earlier that night. It was stalking him in the deliberate manner of its kind!

IT came edging around, so as to leap on him from the side. He knew that he represented fair prey to it; that if he tried to run, it would pounce on him from behind. Wearily he tensed his miniature body, standing poised on the balls of his feet and never dropping his eyes for a moment. He could not repress a grim smile at the ludicrousness of being attacked by an ordinary house-cat, even though it was tiger-sized to him. Though his victory over the weasel, a far deadlier fighter, made him confident he could dispatch it, there was another aspect to the approaching struggle. It would have to be fought in silence. Not four feet away, Hagendorff slept. There lay the overwhelming danger.

Even as these things flashed through his brain, the cat steadily inched nearer on its padded paws. Ghostly starlight framed it now; Garth could see the eager, quivering muscles, the long tail, flat behind, twitching slightly, the rigid, unstirring head and the slowly contracting paws. The terrible suspense of its stalking scraped his nerves. There would be a long pause, then an almost imperceptible hunching forward, with the tail ever twitching; then the same thing again, and over again. It became unbearable. Garth deliberately invited the attack.

He pretended to turn and run, his back towards it. At once he sensed its tensing body, its bunching muscles—then knew that it had sprung.

Whirling, he had a fleeting impression of a supple body in mid-air, of bristling claws and bared, needlepoint fangs. But he was ready. The weasel had taught him his best weapon, the great weight of his body. He streaked in beneath the wide-spread paws, shot his hands into the fur of the throat and threw himself against the shock of the animal's suddenly arrested leap.

There was no standing his weight. Over the cat went, its back thudding into the floor, its claws held powerless by the hundred and eighty pounds of hard flesh that straddled it.

THE fall had made little noise; but, as Garth tightened the grip of his fingers and bored inward, a dull, steady thumping began to sound. It was the cat's tail, pounding on the floor!

Desperately he tried to hook a leg over it, but could not reach far enough. It beat like a tom-tom. From above, there came the sound of a huge frame stirring, and the rumble of a sleepy grunt.

In a moment, the titan would be thoroughly awake.

By the drumming tail alone, Garth realized, his chance of regaining full size was sent glimmering. There was nothing but retreat, now, and a hasty one, if he valued life. Another noise came from the waking Hagendorff. He was sitting up, staring around. Garth jumped to his feet, threw the cat's twitching body beneath the table, and dodged at full speed for the hole whereby he had entered.

Like a mouse he wriggled through, leaped to the ground, scrambled up and made for the forest. He ran with all the speed at his command, and was almost surprised when he reached the black fringe of the forest in safety. In the protecting gloom, he dared to pause and look back.

Hagendorff was not pursuing him. From the sound, he was merely boarding shut the drain hole, to prevent another entrance in that way; then, afterwards, the windows.

Garth was puzzled. "I don't understand it," he said aloud. "Why is he so sure he can get me in the morning? Isn't he afraid I'll leave

the island? Why I've *got* to try to get away, now. It would be death to be here after the dawn!"

He stood there making his plans. They had a rowboat below, powered with an outboard motor. Even in his present size, he might possibly run it, if he could get it started. He would strike down-river for Detroit, and when the gas gave out, the current would carry him on. Some river boat might pick him up and carry him to friends in the city. His grotesquely dwarfed body would prove his story, and they would bring him back and end Hagendorff's mad dream of fame, and help him to regain his normal size. He could superintend the construction of another machine if the present one was wrecked.

When he started down the trail to the river, he seemed to be walking through a haze. He felt curiously light-headed, and his body was completely numb. The long exposure was telling on him, and there was much more of it to come. He wondered if he could hold out until he reached the mainland.

But his mind cleared of the daze the cold and near-exhaustion had brought it to when at last he came to the beach and realized that again Hagendorff had anticipated him. The rowboat was gone! No wonder the giant could afford to wait until daylight.

GARTH floundered down to the beach and ran to where the craft usually lay. There was only a groove in the rough, pebbly surface, a groove left by the boat's keel. He followed it up the bank, and twenty yards in found the dinghy chained and locked firmly to a large tree.

The midget's face grew suddenly very haggard as he stood there, staring at what looked like his death sentence. He should have known Hagendorff would secure the boat, he told himself bitterly. It was a cruel blow, and sheer misery of mind and body gripped him as he turned and peered through the darkness of wind-whipped water and sky toward a horizon that was already lightening. Down-river lay Detroit, a friendly, everyday world. It was not far in miles, but it seemed lost to him forever. . . .

Garth took his eyes from that prospect with a wry twist to his mouth. It chanced that they fell on the painter of the rowboat.

It was a stout Manila cord, some twenty feet in length, and tied tightly to a ring in the bow of the boat. He looked at it dully for a full minute before the idea came to him. Then suddenly the lethargy bred of hopelessness left him. Garth remembered a pocket knife he had left in the boat the day before. He climbed over the side and began to fumble about in the darkness. First he came upon a torn handkerchief which he hastily tied about his loins. Further probing disclosed the knife wedged under a seat in the boat. When he had finally extricated it, he threw the knife over the side and climbed out.

After some minutes of frantic cutting and hacking he severed the rope, and, quickly taking up one of the ends, ran with it further along the bank.

There was still a way of getting off the island. A cold and risky way, but better than waiting miserably for capture. On the bank was a pile of sawn logs, intended for firewood; and a strong rope was in his hands. Much indeed could be done now.

THE making of his raft proved a herculean task, a racking and almost impossible one for a man limited by doll-sized hands and a foot-high body. First the logs had to be rolled to the water's edge, six

of them. Each was as thick as he was tall, and this first part of his task took him a precious half hour, every minute of which brought nearer the dawn. Ripples like ordinary waves washed up the struggling manikin and left him gasping as he stood braced in the cold water and tugged one log after another out and wound the rope under and over it. The raft had to be built in water; he would never have been able to drag the whole thing off the beach.

When at last he wearily tied the rope end to the last log, and stuck his knife handy in it, the clouds on the horizon were flushed by the coming sun. But his means of escape was completed; and hanging on the end, he shoved the raft out into the river. Right then he almost lost his life. For when his feet left the sloping bottom, his great weight, out of all proportion to the size of his body, pulled him under, and it was only by virtue of a desperate clutch on the raft that he escaped drowning. Thrashing furiously, he struggled up from the water, and lay, totally blown, on the logs. It was then he first realized that his chance of life was no stronger than the rope which held them together. For swimming was out of the question, and one or two logs would never support his hundred and eighty pounds.

The end which he lay on was well under water, and the waves splashed up between the bobbing logs. The current he was headed for swept down fifty yards offshore, which was a sixth of a mile to the little legs now thrust out behind and making a rhythmic flutter.

He was off the island! Freedom and life were near! Though his teeth were chattering, his fingers crushed by the jarring logs, and his body utterly wretched, he grinned with joy as the stretch between him and the gloomy mass of the island slowly widened.

THEN came the sun. The skies faded from gray into a delicate, cloud-flecked blue; slowly the air warmed, and the surface of the water seemed to calm under it. Though the sun was good on his body, Garth realized night was more friendly to him, for in the growing light his craft was all too conspicuous to the giant who would presently be following his tracks down to the beach. He chided himself for not having thought of camouflaging the raft with leafy branches. Doggedly, he forced it out.

When at last he felt the pull of the current, he ceased his weary kicking and glanced up into the swiftly advancing dawn. There was a bird soaring through the keen air up there, gliding in easy circles with almost motionless wings. Garth gazed at it somewhat wistfully, envying its freedom and power of flight. And then he shut his eyes. He was very tired. . . .

He must have dozed off for a moment, for he awoke to find himself slipping off. With a sudden jerk he regained his position—and that was what saved his life at that moment. For without warning, while he was nodding, plumed death struck from the skies.

It dropped like a plummet, as was its manner. It had been circling above and judging its swoop, and by rights its curved talons should have arched deep into the unguarded back of the naked figure on the raft. But at the last second the figure moved aside—to late for the hawk to alter its swoop.

The raft rocked under the impact; for a moment Garth Howard, dazed by the sudden attack, did not know what had happened. Huge, scratching wings were thrashing about him; his left arm stung from

where a claw had raked it; and he wrenched around to stare into two wicked slits of eyes behind a fierce, rounded beak that jabbed at him.

EVIDENTLY he represented easy prey to the hawk, for it did not soar away, but instead came at him again in a flurry of beating wings and stabbing beak, a vicious, feathered fighter from above. Caught off guard by the suddenness and savagery of the onslaught, Garth retreated stumblingly, forgetting his weight and the size of the raft and defending himself with his arms as best he could against the rushes of the hawk. The raft tilted perilously; water washed around his legs and he slipped and went under.

He felt his fingers slipping inexorably over the edge of the log he had gripped; his legs threshed up a welter of foam, but he kept going down. Panic clutched him; his weight would sink him like a stone. But suddenly his clutching hand was gripped by steel-like talons, and through the water he caught a glimpse of the hawk straining backwards with mighty sweeps of its wings in an effort to lift him bodily into the air.

His size had deceived it. It could not hoist him, but did manage to drag his head and chest out of the water. That was enough. With an effort, Garth scrambled onto the raft.

The hawk, probably greatly surprised by its failure to soar away with such tiny prey, tore into him again, raking his body painfully. Hardly knowing what he did, Garth grabbed out as it hovered over him and succeeded in wrapping his fingers around one of its legs. Then, bracing himself as best he could, and ignoring the scratching wings and piercing beak, he gave the leg a sharp twist and heard the crack of breaking bone.

He was only half-conscious of the hawk's shrill scream of pain, of its swift retreat into the blue, with the broken leg dangling grotesquely. For only a moment he was aware that he had driven it off; then the pain of his wounds and his utter exhaustion swept up over him, and he flopped down on the raft in a dead faint. . . .

FOR a long time Garth was dimly aware of familiar noises. At first they were faint and scarcely perceptible; but, as his senses slowly began to return, disturbing thoughts came to him. He felt that he was on his back, and confined, and when he twisted, to turn over, he found he could not. He opened his eyes and blinked.

He was back in the laboratory—lying bound, hand and foot, on the long table.

The giant Hagendorff appeared over him, and his deep voice rumbled:

"Badly scarred and bruised, my little friend! Cats you have fought, and birds, and each has left its mark. It was useless to run away last night—not?"

Garth was suddenly too full of a weary resignation to even think of speaking. Remonstrance, he knew, would avail him nothing. The long struggle for freedom and life was over, and he had lost.

The assistant was apparently in good humor. He went on:

"Really, it is too bad, after that magnificent fight of yours! A hawk—was it not? I was following your tracks, and had just reached the beach when I see a great fuss on the water. A raft, I see! A bird, attacking something on it! A little white figure, struggling! Well, it is that easy. I unlock the boat and go to the raft and find my elusive friend there, unconscious. So I bring him back here. He has forgotten: we have an experiment to complete."

There was a fire of exultation in the man's eyes as they glared down at the midget who lay on the laboratory table, just a few feet away from the chamber of the machine. He reached out and ran a thick finger over his victim's body.

"You do not deserve this," he said. "I should kill you outright—but, graciously, I give you death in the machine. Yours will be the first human body to be reduced to an inch; maybe less. This is your martyrdom; for this, your name will live, along with mine, for having perfected the process."

GARTH HOWARD saw that the window was boarded tightly shut. Then Hagendorff caught his eyes as, with a grin, he plunged a hand into a pocket and drew forth the missing panel switch. He dangled it in front of Garth.

"What you would have given for this last night, eh? With your wire to pull the lever so carefully arranged! *Ach*, it was too bad!" He shrugged, then picked up a screwdriver and turned to fix the switch on the control panel.

The moment his back was turned, Garth gazed frantically around. The fantastic fate he had striven so desperately to stave off was very close now. What could he do?

Some tools lay on the table, just out of his reach, among them a pair of cutting pliers. He stared at the pliers—an overgrown tool, half as long as his own body. The twist of Hagendorff's wrist driving home the first screw brought a cold chill over him. The pliers! It was a chance!

He twisted a little, and keeping his eyes on the giant's back, he inched toward them. His hands, tied at the wrists behind him, clutched for them; found them. The jaws were open, and there were two sharp cutting edges. He could not hope to manipulate the whole implement with his bound hands, but he located one edge, painfully brought the rope to it and sawed rapidly.

The steel sliced his flesh, and he felt the warm stickiness of blood. But he disregarded this and kept on. Hagendorff was still working, all unconscious—but the last screw was going in. And then some strands of the rope snapped, and it loosened.

The next second, Garth had wrenched his hands free.

Then, throwing caution to the winds, he sat up, grabbed the great tool and sliced the rope at his feet.

At that moment, Hagendorff finished his job and turned around.

THEIR eyes met. For a breathless instant nothing happened, save that the smile on the titan's face changed to surprise and then fury. Garth scrambled to his feet. The movement brought a bellow of rage, and the manikin saw two enormous hands converging on him in a sweep that bade fair to crush every bone in his dwarfed body.

Leaping backwards instinctively, he hurled the pliers at the giant's head.

They were well aimed, and he saw them strike the temple, stopping the man in his tracks. He thundered, more from anger than pain. His heart pounding wildly, Garth ran back to a position behind a rack of test tubes. It was from there that he saw Hagendorff, cursing crazily, grab up a machinist's hammer and advance upon him.

All sanity had apparently left the giant. His great face was flushed and distorted, and a growing welt showed where the pliers had clipped him. Garth suddenly knew that if he were captured again, death would not come in the chamber, but from those powerful hands, or the weapon they clutched.

The hammer swung back for a

crushing blow. But in the instant it hung poised, Garth lifted a half-filled test tube from the rack before him and swished its contents forward.

The tube held sulphuric acid, and it sprayed over Hagendorff's face. The hammer pitched from his hand; he clutched at his eyes and stumbled back, shrieking in agony.

Garth at once ran to the edge of the table, swung himself over and slid down the leg to the floor. The laboratory door was open and he dashed for it. But, whether or not Hagendorff could see his frantic retreat, he anticipated it, and with a reeling plunge he got there first. Fumbling, he found the key in the hole and turned it. The room was sealed.

BEGINNING then, the blind Hagendorff was a man berserk. With a sobbing roar of pain and fury, he lashed round for the foot-high figure that dodged and wheeled and zig-zagged to keep from his threshing arms and his hands. A table crashed over, and a flood of chemicals mixed and boiled on the floor; then another, as the giant blundered blindly into it. The cages of animals split open, and guinea pigs, rabbits and insects scuttled from their prisons, fleeing to the corners from the wild plunges of the raging German.

Garth went reeling from a glancing blow, and fell against an overturned stool under a far table where he could hardly breathe for the mixed odors of spilt chemicals. By some sixth sense, Hagendorff seemed to locate him, for his huge body turned and came directly for him.

But Garth did not wait. Seizing the stool he whirled it so that it slid smash into the giant's legs. The man pitched over with a grunt, striking the floor so hard that the planks shivered.

He did not rise. He lay there, in a wreckage of glass and splintered wood and stinking chemicals, moaning slightly.

Garth wasted no time, but gripped a leg of the laboratory table, shinned to the top and with frantic speed fixed his strand of wire onto the control lever and round the supporting posts of the instrument panel. Then he jumped for the dynamo switch, caught the handle and jerked it down.

The drone of a generator surged through the room. Then the midget was standing in the chamber, both ends of the wire in his hands; and his heart was thudding madly as he pulled one of them.

It held. Over came the lever, halfway. The brilliant stream of the ray poured down. Dimly the manikin glimpsed the chamber's walls sinking down, the wreckage-strewn room outside diminishing to normal size. Fiery pain throbbed through him, but it was lost in the exultation that filled his mind as the seconds went by. He grew to two feet, two and a half—three.

BUT beyond that he was not to go. The swaying shape of Hagendorff loomed outside the cube. Aroused by the drone of the generator and what it signified, the giant had floundered up from the floor and now came clutching blindly for him.

Garth knew he would have to leave the chamber at once; so, struggling for command of his muscles through the paralysis that numbed them, he tensed his hold on the other wire and pulled it a little. The control lever swung back to neutral; the ray faded and Garth jumped out. He was only a few feet away from the huge convulsed face as the German roared:

"By God, you'll never get back on *this* machine!"

His purpose was plain; his grop-

ing hand had already found the control lever. To prevent his ripping it out, Garth plunged head first into Hagendorff's stomach, and they both went down in a flurry of arms and legs. Garth, scrambling to get loose, was conscious of the ray pouring down again in the chamber above. The lever had not been wrenched out, but jerked over, setting the process of increase on.

The next few minutes were a chaos. Now that Howard was three feet tall he was without some of the advantages of his former smallness and compactness, and his utmost efforts failed to free him from the death clutch of the pain-maddened giant. Over and over they rolled on the floor, Garth trying only to break free, and the other relentlessly holding on and dragging him over to the chamber again.

It was a losing fight for the diminutive one, weakened as he was by his exposure and the fierce fights he had had. Little by little, squirming and resisting with all his remaining strength, he was brought near—to see the German, at last, pull half the reducing apparatus with a crash to the floor.

The ray in the chamber faded off. The machine was silenced forever, so that Garth could never hope to regain his full size in this one.

WITH the realization of this, most of his spirit went, while the savage giant, successful in smashing the machinery, now turned and devoted himself exclusively to his victim.

"Now for you!" he roared in frightening triumph, clutching the smaller man's neck with his great hands and bearing him to the floor.

Against those fingers gouged into his windpipe like a vise of steel, Garth could do nothing. Feebly he gagged, and feebly he clawed at the pitiless hands—and futilely.

It was the end, he told himself. He had come close, but closeness did not count. His eyes bulged, and a shroud of black began to obscure his vision.

And then, suddenly, over the giant's flexed arms, he glimpsed, coming from the chamber on the table, something that chilled the blood in his veins with horror.

It was huge and utterly loathsome. Long, hairy legs folded out, and following them came a furry, bloated body at least five feet thick. Many-faceted eyes fixed themselves coldly on the men on the floor. In one hideous leap the monster soared from the table all the way to the room's ceiling, seeming almost to float as it came down. For a moment it teetered on the floor, not five feet from the giant who, blind and all unconscious of it, was throttling his diminutive victim beneath him.

Garth for a second forgot the grip on his throat in the horror of the monster. He knew at once what it was—a tarantula. It had crawled inside the chamber when its cage was broken, had been there even while he had been there, and had been swollen to its present blood-curdling size while they were fighting and the ray was on. With the smashing of the apparatus, it was free to come out.

IT gathered for the final spring, its terrible legs tensing perceptibly—a creature out of a nightmare. Garth Howard tried to shriek out a warning, but Hagendorff was holding his throat too well. He could only struggle weakly and nod toward the horror beyond; but the message did not get across to the giant.

Then the tarantula sprang again.

For a moment it seemed to hover on Hagendorff's upturned back. When it floated down, its ragged legs cradled over him, and the egg-

shaped body squatted on his back. . . .

Garth felt his frayed nerves and senses going. A hairy leg was touching him, chilling his flesh. Above him, the giant was thrashing impotently, and he found his neck free of the awful grip.

He wormed free. He was hardly conscious of reaching up and unlocking the door, and closing it tightly again as he stumbled forth. Later, it seemed that it was in a dream that he ran wildly into the splendid sunlight outside and down the winding trail. It was only by a tremendous effort that he kept his senses long enough to shove the rowboat out from the beach and hop in.

He never started the motor. All that he had seen and suffered on the island of horror overcame him too soon, and he pitched down in a limp, unconscious heap. . . .

AND so it was, that, the next morning, the two harbor policemen found a rowboat with mysterious cargo floating silently down the Detroit River. So it was that some time later a launch with three local officers churned up to the solitary island, and that gunshots echoed in the gloom of a hushed laboratory room, and a man's white-faced body was carried from the cabin where he had made his one great treacherous effort to steal another's fame.

"JAZZING UP THE UNIVERSE"

CENTURIES of celestial history wheeled across the plaster sky of the new Adler planetarium at Chicago, recently, at the dedication of the astronomical institution, the first of its kind in the Western Hemisphere.

A modern Joshua, working the levers and switches of a complicated instrument, commanded a miniature sun to stand still in the heavens—and it did. He bettered the feat of the Biblical prophet by stopping the sun at any given point on its orbit across the skies and then ran it backward, its attendant planets, planetoids and stars scampering contrary to all rules of the universe.

The Joshua in the person of Professor Philip Fox, director of the planetarium on a "made" island in Lake Michigan, described the instrument with which he made the heavenly bodies cut capers, as a projector, made in Germany at a cost of almost $100,000. As nearly as it can be described by a layman it looks like three immense diving helmets, capping the ends of a tube about six feet long. Each "helmet" is studded with lenses and inside are complicated and strange lights and projectors which throw the images of the celestial bodies on the white plaster dome above that represents the skies. The wheeling motion of the universe toward the west is obtained by revolving the "helmets" in eccentric circles on an axis. The whole effect makes a spectator feel as if the solar system was revolving around him at a greatly accentuated speed.

As a beginning lesson for the layman who attended the opening, Professor Fox set the machine to represent the latitude of Chicago on May 10, 1930. Every one turned his eyes to the east, where a silhouette of Lake Michigan, with its lighthouses and ore ships, is painted on the plaster horizon. The dome was lighted to represent a clear night, and, incidentally, all nights are clear in a planetarium. The machine was started and up from the center of the Lake jumped Mars, red against the darkness.

Professor Fox, with a flashlight that throws the image of an arrow, pointed out the stars as they appeared over the dome. The coming of Mars forecast the dawn of May 10 and in a few moments the sun emerged from its proper latitudinal position out of the lake and blazed its way across the heavens and set behind the silhouette of the Standard Oil Building on the west wall of the dome in less than a minute, denoting that the day had passed in review. At 3:43 p. m., central standard time, the midget moon arose and sailed its course and then set behind the darkened picture of the Straus Tower.

Then Profesor Fox ran off Sunday, Monday and Tuesday for good measure, each time with Mars heralding the dawn and the sun changing position as it does in reality. Fifty centuries of astronomical history can be run off in an hour by the machine. The planets are visible during the day in the planetarium as well as night.

Bart hacked and hacked at the rubbery growth.

The Moon Weed

By Harl Vincent

HOBART MADISON pursed his lips in a whistle of incredulous surprise as he regarded the object that lay in the palm of his hand. An ordinary pebble, it seemed to be, but a pebble in which a strange fire smouldered and showed itself here and there through the dull surface.

Unwittingly the traitor of the Earth, Van pits himself against the inexorably tightening web of plant-beasts he has released from the moon.

"Would you mind repeating what you just said, Van?" he asked.

"You heard me the first time. I say that that's a diamond and that it came from the moon." Carl Vanderventer glared at his friend in resentment of his doubting tone.

"Mean to tell me you've been there? To the moon?"

"Certainly not. I'm not a Jules Verne adventurer. But I'm telling you that stone is a diamond of the first water and that it came from the moon. Weighs over a hundred carats, too. You can have it appraised yourself if you think I'm kidding you."

Bart Madison laughed. "Don't get

sore, Van," he said. "I'm not doubting your word. But Lord, man—the thing's so incredible! It takes a little time to soak in. And you say there are more?"

"Sure. This one's the largest of five I've found so far. And there's other stuff, too. Wait till you see. Fossils, beetles and things. I tell you, Bart, the moon was inhabited at one time. I've the evidence and I want you to be the first to see it." The eyes of the young scientist shone with excitement as he saw that his friend was roused to intense interest.

"So that's what all your experimenting has been aimed at. No wonder it cost so much."

"Yes, and you've been a brick for financing me. Never asked a question, either. But Bart, it'll all come back to you now. Know how much that stone's worth?"

"Plenty, I guess. But, forget about the financing and all that. Where's this laboratory of yours?" Madison had pushed his chair back from his desk and was reaching for his hat.

"Over in the Ramapo Mountains, not far from Tuxedo. I'll have you there in two hours. Sure you can spare the time to go out there now?" Vanderventer was enthusiastically eager.

"Spare the time? You just try and keep me from going!"

Neither of them noticed the sinister figure that lurked outside the door which led into the adjoining office. They chattered excitedly as they passed into the outer hall and made for the elevator.

VANDERVENTER'S laboratory was a small domed structure set in a clearing atop the mountain and well hidden from the winding road which was the only means of approach. Though Bart Madison, who had inherited his father's prosperous brokerage business, had financed his friend's research work ever since the two left college, this was his first visit to the secluded workshop, and its wealth of equipment was revealed to him as a complete surprise. He had always thought of Van's experiments as something beyond his ken; something uncanny and mysterious. Now he was convinced.

The most prominent single piece of apparatus in the laboratory was a twelve-inch reflecting telescope which reared its latticed framework to a slit in the dome overhead. Paralleling its axis and secured to the same equatorial mounting was a shining tube of copper which bristled with handwheels and levers and was connected by heavy insulated cables to an amazing array of electrical machinery that occupied an entire side of the single room.

"Regular young observatory you've got here, Van," Bart commented when he had taken all this in in one sweeping glance of appraisal.

"Yeah, and then some. Not another like it in the world." Van was busying himself with the controls of his electrical equipment, and a powerful motor-generator started up with a click and a whirr as he closed a starting switch.

Madison watched in silence as the swift-fingered scientist fussed with the complicated adjustments of the apparatus and then turned to the massive concrete pedestal on which his telescope was mounted. At his touch of a button the instrument swung over on its polar axis to a new position. The slit in the dome was opened to the afternoon sky, revealing the lunar disc in its daytime faintness.

"You can see it just as well in daylight?" Bart asked as his friend peered through the eyepiece of the telescope and continued his adjustments.

"Sure, the surface is just as bright

as at night. Doesn't seem so to your eye, but it's different through the telescope. Here, take a look."

BART squinted through the eyepiece and saw a huge crater with a shadowed spire in its center. Like a shell hole in soft earth it appeared—a great splash that had congealed immediately it was made. The cross-hairs of the eyepiece were centered on a small circular shadow near its inner rim.

"That," Van was saying, "is a prominent crater near the Mare Nubium. The spot under the cross-hairs is that from which I have obtained the diamonds—and other things. Watch this now, Bart."

The young broker straightened up and saw that his friend was removing the cover from a crystal bowl that was attached to the lower end of the copper tube that pointed to the heavens at the same ascension and declination as the telescope. The air of the room vibrated to a strange energy when he closed a switch that lighted a dozen vacuum tubes in the apparatus that lined the wall.

"You say you bring the stuff here with a light ray?" he asked.

"No, I said with the speed of light. This tube projects a ray of vibrations—like directional radio, you know—and this ray has a component that disintegrates the object it strikes and brings it back to us as dissociated protons and electrons which are reassembled in the original form and structure in this crystal bowl. Watch."

A misty brilliance filled the bowl's interior. Intangible shadowy forms seemed to be taking shape within a swirling maze of ethereal light that hummed and crackled with astounding vigor. Then, abruptly, the apparatus was silent and the light gone, revealing an odd object that had taken form in the bowl.

"A starfish!" Bart gasped.

"Yeah, and fossilized." Van handed it to him and he took it in his fingers gingerly as if expecting it to burn them.

THE thing was undoubtedly a starfish, and of light, spongy stone. Its color was a pale blue and the ambulacral suckers were clearly discernible on all five rays.

"Lord! You're sure this is from the moon?" Bart turned the starfish over in his hand and gazed stupidly at his friend.

"Certainly, you nut. Think I had it up my sleeve? But here, watch again, there's something else."

The crackling, misty light again filled the bowl.

"Suppose," Bart ventured, "you bring in something large—big as a house, let's say. What would it do to your machine?"

"Can't. The ray'll only pick up stuff that'll enter the bowl. Look—here's the next arrival."

The mysterious light died down and the scientist picked up the second object with trembling fingers. It was a knife of beautiful workmanship, fashioned from obsidian and obviously the work of human hands.

"There! Didn't I tell you?" Van gloated. "Guess that shows there were living beings on the moon."

He made minute changes in the adjustment of his marvelous instrument and Bart watched in dazed astonishment as object after object materialized before their eyes. There were fragments of strange minerals; more fossils, marine life, mostly; a roughly beaten silver plate; three diamonds, none of which was as large as that Van had taken to New York, but all of considerable value.

"This'll be something for the papers, Van!" Bart Madison was visioning the fame that was to come to his friend.

"Yeah, all but the diamonds."

"ALL but the diamonds is right!"

These words were spoken by a sarcastic voice, chill as an icicle, that came from the open door. They wheeled to look into the muzzles of two automatic pistols that were trained on them by a stocky individual who faced them with a twisted, knowing grin.

"Danny Kelly!" Bart gasped, raising his hands slowly to the level of his shoulders. He knew the ex-army captain was a dead shot with the service pistol, and a desperate man since his disgrace and forced resignation. "What's the big idea?" he demanded.

"You don't need to ask. Refused me a loan this morning, didn't you? Now I'm getting it this way." Kelly turned savagely on Van, prodding his ribs with a pistol. "Get 'em up, you!" he snapped.

Van had been slow in raising his hands, gaping in stupefied amazement at the intruder. Now he reached for the ceiling without delay.

"You'll serve time for this, Danny!" Bart shouted.

"Shut up! I know what I'm doing. And back up, too—where—no, the other door." Kelly was forcing him toward the door of the cellar at the point of one pistol as he kept Van covered with the other.

Bart clenched his fist and brought it down in a sudden sweeping blow that raked Kelly's cheek and ear with stunning force. But the gunman recovered in a flash, dropped the muzzle of his pistol and pulled the trigger. Drilled through the thigh, Bart staggered through the open door and fell the length of the stairs into the darkness of the cellar. Kelly laughed evilly as he slammed the door and turned the key.

"Hold it, you!" he snarled as he swung on Van who had dropped his hands and crouched for a spring. "If I drill you, it won't be through the leg. I'll take those diamonds now."

HE pocketed one of his pistols, and, keeping the other pressed to the pit of Van's stomach, went through his pockets. Then he added those on the tray by the crystal bowl to the collection, and transferred the entire lot to his own pocket.

"Now, you clever engineer," he grinned, "we'll just operate this trick machine of yours for a while and collect some more. Hop to it!" He watched narrowly as Van stretched his fingers to the controls. "No monkey business, either," he grated; "you'll not change a single adjustment. I've been listening to you and I know the clock of the telescope is keeping the ray trained on the same spot. You just operate the ray and nothing else. Get me?"

Van did not think it expedient to tell him of the drift caused by inaccuracies in the clock and perturbations of the moon's motion. He was playing for time, trying to plan a course of action.

"There may not be any more diamonds," he offered as he tripped the release of the ray.

"Oh, there'll be more. Don't try to kid me."

An irregular block of quartz materialized in the bowl and Kelly tossed it to the floor in savage disgust. Then a small diamond, very small; but he pocketed it nevertheless. The next object was a strange one—a dried seed pod about six inches in length and of brilliant red color. The ray had shifted to a new position on the lunar surface. Another and another of the strange legumes followed, one of them bursting open and scattering its contents, bright red like the enclosing pod, to rattle over the floor like tiny glass beads. Kelly snorted his disgust.

"Still some sort of vegetation out there," Van muttered. The eternal scientist in the man could not be downed by a mere hold-up.

"Can the chatter!" Kelly snarled as the crystal bowl gave up another of the useless pods and still another. He gathered up the evidence of lunar vegetation, a half dozen of the pods, and threw them through the open doorway with a savage gesture. "You trying to put one over on me?" he bellowed.

"How can I?" Van retorted mildly. "I haven't touched a handwheel." He was wondering vaguely whether this lunar seed would grow in earthly soil; what sort of a plant it would produce under the new environment.

Kelly was becoming nervous now. It seemed that little was to be gained by hanging around this crazy man's laboratory. He had a sizable fortune in rough stones already. That big one alone, when properly cut into smaller stones, would make him independent. Maybe there weren't any more, anyway. And the longer he stayed the greater chance there was of getting caught.

The advent of another of the pods decided him. A quick blow with the butt of his pistol stretched Van on the floor and Kelly fled the scene.

BART was pounding furiously on the cellar door when Van first took hazy note of his surroundings. Several uncertain minutes passed before he was able to stagger across the room and release his friend.

"Where is he?" Bart demanded, swaying on his feet and blinking in the sudden light.

"Gone. Socked me and beat it with the diamonds." Van was mopping the blood from his eyes with a handkerchief. "Are you hit bad?" he inquired.

"No, just a flesh wound. Hurts like the devil, though. How about yourself?" Bart limped to his side and sighed with relief when he examined his bleeding scalp. "Not so bad yourself, old man. Where's your first aid kit?"

Van was still somewhat dazed and merely pointed to the cabinet. "Fine pair we turned out to be!" he grumbled after his head had cleared a bit under Bart's vigorous cleansing of the cut on his temple. "Here we stood, meek as a couple of lambs, and let that guy get away with murder."

"Yeah, but those forty-fives made the difference. Ouch!" Bart winced as his friend poured fresh iodine over the wound in his leg. "Have a heart, will you?"

They were startled into silence by a hoarse, strangled scream that came from outside the laboratory. "Help! Help!" someone repeated in a panicky voice—a voice which, at once ended on a gurgled note of despair.

"It's Kelly!" Bart whispered. "He's come back. Something's happened to him." He started for the open door.

"Wait a minute. It may be a trick to get us outside where he can pop us off."

"No, it isn't. For God's sake, look!" Bart had reached the door and was pointing at the ground with shaking forefinger.

THE entire clearing seemed to be alive with wriggling things—long rubbery tentacles that crawled along the ground, reaching curling ends high in the air and had even started climbing the trees at the edge of the clearing. Blood red they were, and partially transparent in the light of the setting sun; growing things, attached by their thick ends to swelling mounds of red that seemed anchored to the ground. Translucent stalks rose from the mounds and sprouted huge buds that burst and blossomed into flam-

ing flowers a foot in diameter, then withered and went to seed in a moment of time. But always the weaving tendrils shot forth with lightning speed, reaching and feeling their uncanny way along the ground and over tree stumps into the woods. One of them emerged from a hollow stump with its slender end coiled around the tiny body of a chattering gray squirrel.

"The moon flowers!" Van cried.

"What do you mean—moon flowers?"

"Dried seed pods. They came over into the bowl, and Kelly threw them out. Now look at the damned things. They're alive!"

Kelly's voice came to them once more from behind the barrier of rapidly growing vegetation. "Help!" he screeched. "I'll give back the diamonds—anything! Only get me away from the things!"

"Ought to let 'em get him," Van growled.

Bart shivered. "Too horrible, Van. Got an ax or anything?"

"There's a hatchet around back. Maybe we can—"

BUT the young broker had scuttled around the corner of the building and Van looked after him anxiously. The vile red tendrils were reaching for the east wall of the laboratory, and he saw that their inner surfaces were covered with tiny suckers like those on the arms of a devil-fish. Carnivorous plants, undoubtedly, these awful half-animal, half-vegetable things whose seed had been transported across a quarter million miles of space. Man eaters! Deadly, and growing with incredible speed. Even the short-lived flowers were fearsome, as they opened their scarlet pansy-like faces and stared a moment before they folded up and shriveled into the seed cases like those that had materialized in the crystal bowl.

Then he noticed that the pods were opening and spreading more of the terrible seed. Nothing could stop this weird growth, now. It would cover the country like a sea of flaming horror, overcoming and devouring every living thing. Cold fear clutched at Van as he realized the enormity of the calamity that had come to the earth.

Bart was skirting the edge of the clearing with the hatchet in his hand, and Van tried to call out to him, to warn him. But his voice caught in his throat, and instead he ran to his assistance, circling the spreading menace to get around behind where Kelly was still shouting. Damn Kelly anway! This never would have happened if he hadn't come on the scene!

Kelly was in the woods, wedged into the crotch of a tree and striking wildly at the clutching tendrils with his clubbed pistol. They mashed easily and dripping red, but were not to be deterred from their ghastly purpose. Kelly's time would have indeed been short had not his erstwhile victims come to the rescue. One of the thickest of the twining things encircled his body and had him pinned to the tree. His breath was coming in gasps as its tightening coils increased their pressure. His coarse features were livid and his eyes bulged from their sockets.

Bart hacked and hacked at the rubbery growth until he had him free; jerked him from his perch, blubbering and whining like a schoolboy. His shirt had been torn from his breast and they saw a great red welt where the blood had been drawn through the pores by those terrible suckers.

"Look out, Bart!" Van shouted.

ANOTHER of the creeping things had come through the underbrush and was wrapping its coils around Bart's ankle. Another

and another wriggled through, and soon they were battling for their own freedom. Kelly staggered off into the woods and went crashing down the hill, leaving them to take care of themselves as best they might.

The stench of the viscous liquid that oozed from the injured tendrils was nauseous; it had something of a soporific effect; and the two friends found themselves fighting the terror in a growing mist of red that blinded and confused them. Then, miraculously, they were free and Van assisted Bart as they ran through the forest. When they reached the road, weak and out of breath, they were just in time to see Kelly's roadster vanish around the bend.

"Yeah, he'd give back the diamonds—the swine!" Van muttered vindictively. Then, shrugging his shoulders, "Well, they won't be much good to him, anyway. Wouldn't be any good to us either, as far as that goes."

"What do you mean? Aren't they real?" Bart was raising himself painfully into the seat of Van's car, his wounded leg suddenly very much in the way.

"Sure they're real. But don't you realize what this thing means—this ungodly growth that's started?"

"Why—why, no. You mean it'll keep on growing?"

"And how! Those inner stalks drop a new batch of seeds every five minutes or so. Presto!—a flock of new plants spring up ten feet from the first; dozens of them for every pod that drops. You know how geometrical progression works out. They'll cover the whole country—the whole world. Lord!"

"Man alive, this is terrible! I hadn't thought of that before. What'll we do?"

"Yeah, that's the question: what *can* we do?" Van started his motor and jerked the car to the road. "First off, we're going to get away from here—fast!"

Bart gripped his arm as he shifted into second gear. "Look, Van!" he babbled. "They're out of the woods already. Loose! The red snakes are loose from their stalks. They're alive, I tell you!"

It was true. Several of the slimy red things were wriggling their way over the macadam like great earthworms, but moving with the speed of hurrying pedestrians. Free, and untrammeled by the roots and stems of the mother plants, they had set forth on their own in the search for beings of flesh and blood to destroy. Millions of their kind would follow; billions!

In sudden panic Van stepped on the gas.

FIFTEEN minutes later, with shrieking siren, a motorcycle drew alongside and forced them to the curb. "Where's the fire?" the sarcastic voice of a stern-visaged officer demanded, when Van had brought his car to a screeching stop. Seventy-five, the speedometer had read but a moment before.

"It's life and death, officer," Van started to explain. "We must get to the proper officials to warn the—"

"Aw, tell it to the judge! Come on now, follow me."

"But officer, there's death on its way from the hills, I tell you. Red, creeping things that'll be here in a couple of hours—"

"Get away from that wheel. I'll drive you in meself. You're fulla applejack."

Bart had opened the door on his side and was limping his way around the back of the car. This was serious. They *had* to get away; had to spread the word in a way that would be believed before it was too late. The officer was tugging at Van's arm, astonishment and black rage showing in his weather-beaten countenance. Speeding,

drunk, resisting an officer—they'd never get out of this mess! A swift uppercut interrupted the proceedings. Bart's leg was numb and stiff, but his good right arm was working smoothly and with all its old time precision. His second punch was a haymaker. With his full weight behind it, it drove straight to the chin and stretched the officer on the concrete. Thoughtfully, Bart removed his pistol from its holster before scrambling in at Van's side.

"Boy, now we're in for it!" he gasped.

"And we might as well make a good job while we're at it." Van let in his clutch with a jerk, and again they were breaking all traffic regulations.

IT was dusk when they roared in through the gate at the Rockland County Airport and pulled up at the hangar office. Van rushed in, shouting for Bill Petersen, and Bart followed. A slender, fair-haired youth in rumpled flying togs greeted them.

"Bill, my friend, Bart Madison," Van blurted without pausing for breath. "Listen, we've got to have a plane right away. Got one with a radio?"

"Yes, but what's all the rush? Where you going?"

"Albany. Right away. Make it snappy, will you?"

"Sure, but what's it all about?" Young Petersen was leading them to the field where a sleek monoplane was in waiting as if they had ordered it. "Warm her up, Joe," he called to the mechanic.

"Listen, Bill—I never lied to you, did I?" Van asked, when they were seated in the plane's cabin.

"Not that I know of. But sometimes I've thought you were lying, until I saw with my own eyes the things you had told me about. What is it this time?"

"Death and destruction. Coming down out of the Ramapos. We've got to warn the country. Plants, Bill—squirmy red plants with long feelers that can twist around a man and devour him. Half animal, they are, and the feelers break loose and crawl by themselves. Multiplying like nothing you ever saw. Millions of them in an hour."

"What?" Petersen stared incredulously as his motor roared into life. Then he gave his attention to the business of taking off. He jerked the thumb of his free hand toward the radio.

VAN'S expert fingers manipulated the switches and dials of the portable apparatus, and its vacuum tubes glowed into life. "2BXX calling 2TIM," he droned into the microphone.

"Who's that?" Bart asked. The drone of the motor was barely audible in the closed cabin and did not interfere.

"The *Times*. Trying to get Johnny Forbes. If anyone can get this thing across, he can. Wait a minute, here they are." He closed his eyes as he listened to the murmuring voice in the headphones.

Then he was talking rapidly, forcefully, and the young flyer gazed with owlish solemnity at Bart as they listened to his conversation. It was plain that Bill was but half inclined to believe, though impressed by the earnestness and evident apprehension displayed by his two passengers.

"Yes, 2BXX," Van was saying. "Connect me with Johnny Forbes, please—in a hurry. Yes. . . . Hello, Johnny, it's Van—Carl Vanderventer, you know. Yes; got a scoop for you, but first I want you to get it in the broadcasts. Get me? It's about a man-eating plant that's starting to overrun the country. No—listen now, I'm not dreaming—listen—"

The frantic scientist rambled on and on about the seed from the

moon, the red death that was creeping down from the mountains, the horror of the calamity as he and Bart had visioned it. Then, with a sudden note of despair, his voice trailed off into nothingness and he turned a drawn white face to his two friends.

"Laughed at me. Hung up on me," he groaned. "Good God! We've got to do something—quick!"

"Be in Albany in an hour," the pilot suggested. "What you going to do there?" He believed, now. His expression of horror showed it.

"See the governor. But, man, it's an hour wasted! We must stir up the country—get the word to Washington—everywhere. It might be possible to fight the things some way if we can mobilize State and National resources quickly enough. Bill, Bart, what can we do?"

THE plane sped on through the night under control of her gyro-pilot as the three men racked their brains for a solution of the problem. If a hard-boiled newspaper man would not believe the story, who could?

"I've got it!" Bart shouted suddenly. "Can either of you pound a key—code, I mean?"

"Sure, I can. Then what?" Petersen returned.

"Fake an S. O. S. Don't you see? All broadcasting has to stop, and every ship at sea, every air liner in this part of the country'll be listening—standing by. Give 'em the story in code. Let 'em think we're in a ship from the moon—captured by Lunarians who are here to destroy the world with this weed of theirs—anything. Make it as weird as possible. Most everyone'll think it's a hoax, but there are ten thousand kids—amateurs—who'll be listening in. Somebody'll believe it, and, believe me, there'll be some investigating in the neighborhood of the growth in no time."

"By George, I believe that'll do it!" Van exclaimed. "And the broadcasters listen in for an S. O. S. themselves. Got to, you know, so they know when to start up again. Some smart announcer will tell the story—maybe even believe it. The trick will work, sure as shooting!"

THE pilot glanced at his instruments and saw that the automatic gyro-apparatus was functioning properly. Then he moved over to the radio and threw the switch that put the key in circuit instead of the microphone. Rapidly he ticked off the three dots, three dashes, and again three dots that spelled the dread danger signal of the air. Over and over he repeated the signal, and then he listened for results.

"It worked!" he gloated, after a moment. "They're all signing off—the broadcasters. The Navy Yard in Brooklyn gives me the go-ahead."

He pounded out the absurd message with swift fingers, pausing occasionally to ask a pertinent question of Van or Bart. At Van's request he added a warning to all residents of New York State west of the Hudson River and of northern New Jersey to flee their homes without delay. He even asked that the message be relayed to the governors of the two states, and that Governor Perkins of New York be advised that they were on their way to Albany to discuss the situation. But he balked at the story of the Lunarians, telling instead the equally strange truth regarding the origin of the deadly growth, and adding the names of Van and Bart to lend authenticity to the tale.

Then he signed off and switched the radio receiver to the loud speaker before returning to the pilot's seat.

Bart tuned in on the various broadcasters as they resumed their programs, finally settling on WOR,

Newark, whose announcer was reading the strange message to his radio public with appropriate comment. A crime and an outrage he called it, an affront to the industry and to the public. An insult to the government of the United States. But wait! A telephone call had just been received at the station from the village of Sloatesburg. A reputable citizen of that town had reported the red growth at the edge of the State road—huge red earthworms wriggling across the concrete. Another call, and another! The announcer's voice was rising hysterically.

"It *did* work, Bart," Van exulted. "Now the hell starts popping."

GOVERNOR PERKINS met them in person when they arrived at the Municipal Airport in Albany. A great crowd had gathered in the shadows outside the brilliance of the flood lights, and a police escort rushed them to the governor's private car.

"Here's where you go to the Bastille for socking that cop," Van observed. His spirits had risen appreciably since that successful S. O. S. call.

But the governor was in a serious mood, as they made their way toward the executive mansion through the milling crowds that lined the hilly streets of the capital city of New York State. Proofs had not been lacking of the truth of Bill Petersen's radio warning. Already the spreading red death had covered a circle some eight miles in diameter, covering farm lands and destroying the crops, blocking the roads and trapping many on the streets and in their homes in nearby towns. More than a hundred had lost their lives, and thousands were fleeing the threatened area. The country was in an uproar.

"Gentlemen," the governor said, when they had reached the privacy of his chambers, "this is a serious matter, and no time must be lost in dealing with it. Nevertheless, I want you, Mr. Vanderventer, to tell your story of the thing to me and to the radio system of the United States Secret Service. The President himself will be listening, as will the chief executives of most of the states. Hold nothing back, as the fate of our people is at stake."

SO Van faced the microphone and related the history of his work in the little laboratory in the Ramapo Mountains. He told of his interest in the earth's satellite, and of his first unsuccessful experiments with ultra-telescopes in the endeavor to explore its surface close at hand; of the failure of a spaceship he had built; of the final discovery of the ray, by means of which it was possible to transport solid objects from the one body to the other. He told of the discovery of man-made relics and of fossils; he told of the diamonds, and of the attack by Dan Kelly which had resulted in the spreading of the seed of the deadly moon weed. He even related the incident of the traffic policeman, at which the governor smiled.

"That has been reported," he said, "and you need have no fear on that score. The charges will be dropped. I now ask that you give us your opinion as to the best method of combatting this new enemy. Have you any ideas?"

"I have not, sir," Van replied gloomily, "though I believe it can be done only from the air. Possibly bombing, or a gas of some sort—I don't know. It will take time, Mr. Governor."

"Yes, and meanwhile the thing is overwhelming us at what rate?"

"As nearly as I can estimate it, the growth is moving with a speed of four or five miles an hour."

"By morning you expect it will

have traveled forty or fifty miles in all directions?"

"I'm afraid so."

A sharp buzz from the instrument on the governor's desk interrupted them. "The President," he whispered.

"That is enough, Governor," came the husky tones of President Alford's voice. "I shall communicate with Secretary Makely at once. All available army bombing-planes will be rushed to the scene. You, sir, will mobilize the militia, as will the governors of the other states. Meanwhile, this young scientist is to report to the Bureau of Scientific Research in Washington—to-night. Have him bring a supply of these seeds with him."

That was all. Governor Perkins offered no comment, but merely rose from his seat to indicate that the discussion was ended. A solemn silence reigned in the room.

"Let's go!" exclaimed Bill Petersen suddenly, unawed by the presence of the governor. "My ship's waiting, and we can stop off for a couple of those pods and still make Washington in two hours. Come on!"

Governor Perkins smiled. "Good luck, boys," he said, as they were ushered from the room. "My car will return you to the airport. And remember, the country will be watching you now, and expecting much from you. Good-by."

They were to recall his words in the dark days ahead.

BEFORE they had reached Newburgh, they saw a dull red glow in the skies that told them the news broadcast to which they had been listening had not exaggerated. The red growth was luminous in darkness. Off there to the southwest, it was as if a vast forest fire were lighting the heavens. No wonder the panics and rioting were getting out of control of the police!

Coming up over Bear Mountain, they caught their first glimpse of the sea of fire that was the red death by night. Like a vast bed of glowing embers it covered the countryside, extending eastward to Haverstraw where it was temporarily halted by the broad Hudson. It was a shimmering, undulating mass of living, luminous things, eating their horrible way through all organic matter that stood in their path. Writhing, squirming, all-absorbing monsters that sent out an advance guard of independent snake-like tendrils to capture and hold for the lagging mother-plants whatever of live stock and humanity they were able to find.

"Think they'll get over the river, Van?" Bart asked.

"Sure they will. Every fugitive who had a narrow escape after being in contact with the things is a potential carrier of the seed. I found several of them sticking to my clothing after we got away. I picked a couple off your coat, but didn't tell you."

"Lord! What did you do with them?"

"Put them in the ash receiver in my car—like a fool. Wouldn't have to go down for more if I'd kept them."

"Well, it can't he helped now. We'll have a job getting some down there now, too."

"I'll say so." Van lapsed into gloomy silence.

THEY were over the landing field above Tomkins Cove, and Bill turned on the siren whose raucous shriek operated the mechanism of the flood-light switches by sound vibrations. The field sprang into instant illumination, and they circled it once before swooping to a landing. They were but a mile from the advancing terror.

The field was deserted, and the three men started off immediately in

the direction of the oncoming weed.

"We'll have to make it snappy," Van grunted. "We've got about twelve minutes to get the pods and get back to the ship. The damn things'll be here by that time."

They scrambled over fences and pushed through thickets. The lighted windows of a deserted farmhouse were directly ahead, and they ran through the open gate and across the fields. Ever, the glow of the weed grew brighter. A terrified horse galloped wildly past them and crashed into the fence, whinnying piteously as it went down with a broken leg. They could see the red rim of the advancing horror just beyond the road.

One of the detached tendrils slithered past, each glowing coil distinctly visible.

"Lucky the things can't see!" Bart shuddered.

"Yeah," said Van. "Have to dodge 'em to get in close enough to one of the plants. Keep your eyes peeled now, you fellows, in case one of us gets caught."

A terrific explosion rocked the ground. They had paid no heed to the roaring of motors overhead. The bombers were on the job! Shooting skyward, a column of flame not a hundred yards from them showed where the high explosive had landed in the red mass. Then, slimy wriggling things rained all about them, fragments of the red weed that still squirmed and crawled and clung. Bill Petersen yelled and clutched at his neck where one of the things had taken hold.

Another warning whistle of a falling bomb. Crash! More of the horror raining down and splattering as it fell. Whistle—crash! A huge blob of quivering, luminous jelly fell before them—a portion of one of the mother-plants. Crash! Crash!

"Run!" Van shouted. "Run for the plane. We'll never make it now. Damn those bombers, anyway!"

All along the advancing front the bombs were bursting, shattering the air with their detonations and scattering the glowing red stems and tendrils in all directions. The din was appalling, and the increasing brightness of the crimson glow added to the horror of the situation. Stumbling and cursing, they ran for the plane.

"Fools! Fools!" Bill was shouting. "Can't they see the field and the plane? Why in the devil are they dropping them so near?"

THEN Bart was down, clawing at a three-foot length of red tendril that had fallen on him and borne him to the earth.

"Bart! Bart!" Van turned back and was tearing at the thing with fingers that were slippery with the sap that oozed from its torn skin. Monstrous earthworms! Cut them apart and each portion lived on, took on new vigor. And these vile things could sting like a jellyfish! Where each sucker touched the skin a burning sore remained.

Bill helped them break away from the thing, and all three fought on toward the lights of the landing field. Only a short way off now; it seemed they would never reach it. The bombers were dropping their missiles with unceasing regularity, and the red death only spread the faster.

When they scrambled into the cabin of the plane, the red wall of creeping horror was almost upon them. Advancing speedily out from the red-lit darkness, it seemed to halt momentarily, when it emerged into the brilliance of the great arc-lights which illuminated the field. Then, more slowly and with seemingly purposeful deliberation, the wriggling feelers reached out from the mass and bore down upon them. Bill slammed the door and latched it, then fumbled frantically with the starter switch. A most welcome

sound was the answering roar of the motor.

The pilot yanked his ship into the air, taking off with the wind rather than running the risk of remaining on the ground long enough to taxi around and head into it. The plane acted like a frightened bird as Bill struggled with the controls, darting this way and that, and once missing a crash by inches as the tail was lifted by the treacherous ground wind. Then they were clear, and slowly gained altitude in a steep climb.

"Whew!" Van exclaimed, mopping his red-splattered forehead with his handkerchief. "That was a narrow squeak, boys. And we haven't got the seeds yet—unless we can find a few on our clothing."

"Who said so?" Bart gloated. "Look at this."

He opened his clenched fist and disclosed one of the pods, unbroken and gleaming horribly scarlet in the dim light of the cabin. Bill heaved a sigh of relief as he banked the ship and swung around toward the south. He had dreaded another landing near the sea of moon weed. Van chortled over their good fortune as he examined the mysterious pod. One good thing the bombers had done, anyway! Blew one of the things into his friend's hands.

BART and the young pilot found themselves very much out of the picture when they reported with Van at the Research Building in Washington. The Government had no use for them in this emergency; it was the scientist they wanted, and he was immediately rushed into conference with the heads of the Bureau. His two friends were left to shift for themselves, and they joined the crowds in the street.

The name of Carl Vanderventer was on everyone's tongue. Cursing and reviling him, they were, for the hare-brained experiment which had been the cause of the terrible disaster. Fools! Bart seethed with rage and nearly came to blows with a number of vociferous agitators who were advocating a necktie-party. Why hadn't the officials published the entire story as Van told it over the Secret Service radio? There was no mention of Dan Kelly in the broadcast news, nor of the fact that the police were searching for him in every city and town in the country. Another instance of the results of secrecy in governmental activities!

"We'd better find ourselves a room and turn in," Bart growled. "Let's get out of this mob before I slam somebody."

Bill Petersen was only too willing. He was suddenly very tired.

In the Willard Hotel they were assigned to an excellent room, and Bart insisted on switching on the broadcasts and listening to the news. Far into the night he sat by the loud-speaker, or paced the floor as an exceptionally calamitous happening was reported. But Bill slept through it all.

The army bombers had been recalled. Their efforts had worked more harm than good. The invincible moon weed now had crossed the Hudson River at Nyack and Piermont. Tarrytown was overrun, and many of the inhabitants had lost their lives either in the maws of the insatiable monsters or in the panics and rioting that accompanied the evacuation of the town.

NEW JERSEY was covered as far south as New Brunswick, and west to Phillipsburg and Belvidere. At Mauch Chunk the contents of twenty oil tanks had been diverted to the Delaware River, and the floating oil film was proving at least a temporary protection to a considerable portion of the state of Pennsylvania. In New York State

the growth had buried hill and valley, town and village, as far as Monticello, and, along the Hudson, extended as far north as Kingston. At Poughkeepsie, on the opposite side of the river, frantic householders had armed themselves with rifles and shotguns, and were killing off all refugees who attempted to land from boats at that point. But the militia was on guard at the bridges, assuring safe crossing to the thousands who fled the red death over these routes. There was no keeping the seed of the moon weed from finding its way east.

At some points fire had been used with considerable success as a barrier, hundreds of acres of forest lands being destroyed in the endeavor to stem the crimson tide. But, after the ashes were cool, germination would recur, and the weed would continue on its triumphant way. Acid sprays and poison-gas of various kinds had been tried without appreciable effect. The casualty estimates already ran into the tens of thousands; rumor had it that nearly one hundred thousand had lost their lives in the city of Newark alone. There was no way in which the figures could be checked while everything was in a state of confusion.

Communication lines were broken, roads blocked, gas and electric supply systems paralyzed and the railroads helpless. Trains could not be driven through the glutinous, wriggling mass that piled high on the tracks. Only the radio and the air lines were operative in the stricken area, and even these were of little value to the unfortunates who, in many cases, were surrounded and cut off from all hope of succor.

At four in the morning, with aching heart and reeling brain, Bart threw himself on the bed without undressing and fell into the troubled sleep of exhaustion and despair.

THE next day brought no encouragement, though it was reported that the growth developed with less rapidity after sunrise than it had during the night. Bart endeavored to get Van on the telephone, but was curtly informed by the operator at the Research Building that no incoming calls could be transferred to the laboratory where he was working. Knowing his friend, he pictured him as working feverishly with the Government engineers and giving no thought to sleep or food. He'd kill himself, sure! But such a death, even, was preferable to the red one of the moon weed.

The Canadians and Mexicans had been quick to protect their borders and forbid the landing of any American aircraft or the passage of trains and automobiles. But the seed had reached Europe, one of the twelve-hour night air-liners having carried a thousand refugees who had sufficient foresight and the means to engage passage. It was a world catastrophe they faced!

By mid-afternoon the streets of Washington were almost deserted. "It was less than twenty-four hours since the first moon seed took root, and already the crimson growth had progressed nearly a hundred miles southward from the point of origin! Another twenty or thirty hours and it would reach the capital city—unless Van and those engineers over in the Research Building discovered something; a miracle.

Bart tried the telephone once more and was overjoyed when the operator, all apologies now, informed him that Van had been trying to reach him for several hours.

"Listen, old man," his friend's voice came over the wire: "I've been worried as the devil not knowing where you were. I want you and Bill to stick around where I can get you at any time. I may need you. Where are you staying?"

"The Willard. Have you doped out something?" Bart answered in quick excitement.

"Maybe. Can't let anything out yet—not till we've tested it thoroughly. But I can tell you that a hundred factories are already working on machines we've devised. By good luck it only means minor changes to an apparatus that is on the market in large quantity."

"Great stuff. The city's nearly emptied itself, you know, and, boy, how they've been razzing you over the radio and in the papers—howling for your hide, the whole country."

"I know." Van's voice was calm, but Bart sensed in it something of a cold fury that was new to him in his friend. The young scientist was bitterly resentful of the attitude of the public.

"Can we see you, Van?"

"No, nor call me either. Better hang around the hotel and wait for a call from me. So long now, Bart. I've got to get busy."

"So long."

Bart gazed solemnly at Bill Petersen, who had been listening abstractedly to the one-sided conversation. Bill had given up hope and was resigned to the inevitable.

"Says he may need us, Bill," said Bart.

"Yeah? Well, we'll be ready for anything he wants us to do. It's no use though—anything."

"What do you mean—no use? You never saw Van licked yet, did you?"

"Sure I did. By his super-telescopes and the rocket ship."

"But this is different." Bart was a staunch defender of his friend. He glared at Bill for a moment, and then switched on the news broadcast which he knew he detested.

THE progress of the moon weed continued unabated. In the city of New York a million souls were reported as having lost their lives, and this in spite of the difficulty experienced by the uncanny moon weed in obtaining a foothold in Manhattan. It had been thought that the asphalt and concrete would prove an effective barrier, and so they did for a time. But, with the seed active in the parks and along the water fronts, it was not long before the powerful roots of the greedy plants worked their way underneath, ripping up pavements and wriggling into cellars as they progressed. The city was a mass of wreckage and a maelstrom of fighting, dying humanity.

Whole regiments of the National Guard were wiped out as they fought off the weed with ax and bayonet, in the effort to provide time for the refugees to clear from their homes in certain localities. All transportation facilities to the south and west were taxed to the utmost. There was fighting and killing for the possession of automobiles and planes and for room in trains and buses. Air-line terminals and railroad stations were the scenes of dreadful massacres as the police and military guards fought off the crazed and desperate creatures who attacked them en masse. And still the news announcers prated of the responsibility of one Carl Vanderventer.

The telephone bell rang, and Bart answered it in relief. At last they were to see some action! But no, it was merely the desk clerk, notifying him that all employees were leaving the hotel and that they would be left to shift for themselves. Yes, there was plenty of food in the kitchens; they were welcome to it. And a permanent telephone connection would be made to their room. The frightened clerk wished them luck.

IN endless monotone, the voice of the news announcer droned on. Binghamton and Elmira, Albany and

Schenectady, New Haven, Philadelphia, Allentown—all had succumbed. The casualty estimates now ran into the millions. The mist, the red mist that rose from the steaming weed, was drifting westward and spreading the seed with ever increasing rapidity. For now the monstrous growth from out the sky was adapting itself to its environment; providing the seed with feathery tufts that permitted the winds to carry them far and wide like the seed of a dandelion.

"Turn off that damn thing!" Bill shouted. And he jumped to his feet, his eyes glinting strangely in the twilight gloom of the room. Bill was close to the breaking point.

"Guess you're right," Bart mumbled. "Not good for either of us to listen to that stuff." He switched off the receiver, and they sat in silence as darkness fell over the city.

Bill shivered and felt for the button of the electric light which he pressed with a trembling finger. They blinked in the sudden illumination, but it cheered them somewhat. It was not good to sit in the darkness and think. Besides, they knew that the turbine generators of Potomac Edison were still running. Some brave souls were sticking to their jobs—for a time, at least.

"God!" Bill suddenly groaned, after an endless time of dead silence. "My sister! Lives in Pittsburgh, you know. Wonder if she and the kids got away. It won't be long before the damn stuff gets there."

Bart thanked his lucky stars that he had no family ties. "Oh, they've had plenty of warning," he tried to console Bill. "Hours, you know; and the westbound lines are in good shape from there. I wouldn't worry about them if I were you."

There was utter silence once more. Even the customary street noises was lacking. Both men jumped nervously when the shrill siren of a police motorcycle sounded in the distance. Bart thought grimly of his fracas with the officer who had tried to arrest Van. How long ago that seemed, and how inconsequential an incident!

Their windows faced north, and by midnight they could make out the red glow of the moon weed, that awful band of flickering crimson that painted the horizon the color of blood. The telephone clamored for attention and Bill stifled a hysterical sob as the terrifying sound broke the eery stillness.

Van was on the way to get them! He had a Government car and they were to go to Arlington for Bill's plane. Then what? He refused to commit himself; they must follow him blindly. Anything was better than this inactivity, though. Bart shouted with glee.

"WE'RE going north," Van replied shortly, in answer to Bart's question when they entered the official car in front of the hotel, "after Dan Kelly."

"After Dan Kelly? Got a line on him?"

"Yes. Secret Service reports him in Toronto. The Canucks are after him now, but, by God, I'm going to get him myself!"

Van was haggard and wan, his eyes gleaming with a fanatical light. The strain had done something to him—something Bart didn't like at all. This was a different Van from the man who had entered his office two days previously. Unshaven and unkempt, he looked and talked like a drunken man on the verge of delirium tremens.

"What's the idea, Van?" he asked gently.

"I'm going to get him, I tell you. The scum! It's his fault the whole world's against me. I'll get him, Bart; I'll kill him with my bare hands!"

So that was it! The combination of gruelling labor in the effort to save mankind from the dread moon weed, and bitter censure from the very people he was trying to save, had been too much for Van. He had developed a fixation, unreasoning and murderous; he'd get even with the man who had caused the trouble. And nothing could deter him from his purpose: Bart could see that. Might as well humor him and help him. It made little difference, anyway, with the red doom spreading at its present rate. They'd all be victims in a few days.

They were speeding through the streets of Washington at a break-neck rate. Van bent over the wheel, and like a demented man glued his wildly staring eyes to the road.

"What about your work?" Bart asked, after a while. "Has anything been accomplished?"

"Yes and no. They'll be ready to shoot in a few hours. Don't know whether it'll be a complete success or not. But I sneaked away anyhow. This other thing's more important to me right now."

"What's the dope? Can you tell us now?"

"Sure. I've got one of the machines in the car and I'll explain when we're on our way to Canada."

This wasn't like Van. Never secretive and always in good humor, he was treating his friends like annoying strangers.

"You can't land in Canada," Bill ventured, as they pulled up at the gate of the airport.

"Like hell I can't! You watch my smoke, and let any bloody Canuck up there try and stop me!"

He was lifting a small black case from the luggage carrier of the car as he replied. Bart silenced the airman with a look.

WHEN they had taken off and were well under way, Van opened his black case and set a vacuum-tube apparatus in operation. They were nearing the fringe of the glowing sea of red that was the vast blanket of moon weed. It now extended to within a few miles of Baltimore and stretched northward as far as the eye could see.

"It was a cinch," Van was explaining. "When I first saw that the growth slowed up under the arc-lights at Tomkins Cove it gave me the glimmering of an idea. Then, on the following day, when we learned that the weed spread more slowly in sunlight, I was convinced. The stuff is dormant on the moon, you know."

"Why?" Bart asked breathlessly.

"Because there is no atmosphere surrounding the moon, and the sun's rays are not filtered before they reach its surface as they are here. The invisible rays, ultra-violet and such, are present in full proportion. And the moon weed can not flourish when subjected to light of the higher frequencies. It died out when the moon lost its atmosphere, and only revived on being brought to earth—probably a million times more prolific in our dense and damp atmosphere and rich soil. The thing's a cinch to dope out."

"Yeah!" Bart commented drily. Van was now talking and he could have bitten off his tongue for interrupting him.

This machine of Van's was a generator of invisible light in the ultra-indigo range, Van explained. You couldn't see its powerful beam, but they had proved in the laboratory that it was certain doom to the moon weed. They had grown the stuff from seed in steel cages, and played with it until they were all satisfied. Now would come the final test. Ten thousand planes were being equipped with the new generator, which was merely an adaptation of standard directional television transmitters, and to-night these would start out to fight the weed. It was a cinch!

BENEATH them the red cauldron seethed and tossed as they sped northward; the crimson blanket of death that was steadily covering the country.

"Drop to a thousand feet, Bill," the scientist called, "and then watch below. But, don't slow down. We've got to get to Toronto!"

The ship nosed down and soon leveled off at the prescribed altitude. Van's vacuum tubes lighted to full brilliancy, and a black spot appeared on the glowing surface just beneath them, a black spot that extended into a streak as the plane continued on its way. They were cutting a swath of blackness fifty feet wide through the heart of the growth!

"See that!" Van gloated. "It's killing them by millions! And the best of it is the effect it leaves behind. The soil is permeated to a depth of several inches and the stuff will not germinate in the spots where the ray has contracted. Oh, it works to perfection!"

Bill was exuberant; his hopes revived miraculously. He gave his motor the gun and got out of it every last revolution that it could turn up. He must get Van to Canada! Not such a bad idea, this going after Kelly, at that!

Bart was voluble in his praise, then caught himself short as he remembered that he had doubted Van but a half hour previously; doubted him and despaired. Now Van, lapsing into gloomy silence after his triumph, was again thinking of nothing but revenge. The getting of Dan Kelly meant more to him now than the extinction of the moon weed.

WHEN they landed at the Toronto Airport they were welcomed with open arms instead of with rifle fire as Bill had anticipated. The news had gone forth. Already a thousand planes flying over the United States were driving back the sea of destruction. The invisible ray was a success, and the name of Carl Vanderventer was now a thing with which to conjure, rather than one on which to heap imprecation and insult. Van grimaced wryly at this last bit of news.

Danny Kelly? No one at the airport had ever heard of him. Van telephoned in to the city; to Police Headquarters. Yes, they had apprehended the fugitive American at the request of Washington, but he was a slippery customer. He had escaped. Van raged and fumed.

Of what use were the congratulations of the night flyers who still loitered in the hangar; of what consolation the radio reports of the success of the ultra-indigo ray in the States and in Europe? He had come after his man and he'd failed. Defeat was a bitter pill.

The news broadcasts from the States were jubilant and became increasingly so during the night. The moon weed was being driven back on a wide front and by morning would be entirely surrounded. There would be no further loss of life and little more destruction of property. Carl Vanderventer had saved the day! Van grunted his disgust whenever an announcer mentioned his name.

When daylight came they prepared to return. Little use there was of searching the highways and byways of Canada for the fugitive. He'd simply have to wait until the Canadians were able to get a line on Dan Kelly again. It was maddening! But Bart was glad. The light of reason was returning to his friend's eyes in the reaction.

Then there was a telephone call from the city for Van. Police Headquarters wanted him. The fanatical glint returned to his eyes when he ran for the hangar to answer the call. Perhaps they had already captured Kelly! And he had an order

in his pocket for the man's return to the States. He'd been made a deputy, and with Kelly released to him anything might happen. Something *would* happen.

BUT the police were reporting the unexplainable reappearance of the moon weed just outside the city limits at a point near Cookesville. Would Mr. Vanderventer be so kind as to fly over there and destroy it before any lives were lost? He would.

The growth had covered an acre of ground by the time they reached the spot designated. But it was the work of only a minute to blast it out of existence with the ultra-indigo ray. Van surveyed the blackened and shriveled mass with satisfaction.

"Let's land and take a look at it," he said.

Bart thought he saw a look of exultation flash over his careworn features.

Soon they were wading deep in the blackened remains of the moon weed. The stems and tendrils snapped and crumbled into powder as they passed through. The stuff was done for, no question of that.

Bill Petersen yelled and pointed a shaking forefinger at an object that lay in the blackened ruin. It was a human skeleton, the bones bare of flesh and gleaming white in the light of the early morning sun. Van was on his knees, quick as a flash, feeling around the grewsome thing; pawing at the shreds of clothing that remained.

Then he was on his feet, his face shining with unholy glee. In his hands were a half dozen small, smooth objects which looked like pebbles. The diamonds!

"I thought so!" he exclaimed. "It's Kelly. Only way the seed could have gotten up here. He had some on his clothes and didn't know it. I couldn't get him myself—but anyway I'm satisfied."

HE staggered and would have fallen had not Bart caught him in his arms. Poor old Van! Nearly killed him, this thing had, but he'd be himself again after it was all over. No wonder he'd gone out of his head with the horror of it, and the blame that had been so cruelly laid on him! No wonder he'd become obsessed with this idea of getting square with Dan Kelly! But now he was content; sleeping like a babe in Bart's arms.

Tenderly they carried him to the plane and laid him out on the cushions in back. They'd let him sleep as long as he could; return him to Washington where he'd receive his just dues in recognition for his services. Then would follow the work of reconstruction and rehabilitation. Van would glory in that.

Bart regarded his sleeping friend thoughtfully as they winged their swift way toward the American border. The harsh lines that had showed in his face during the past few hours were smoothed away and in their place was an expression of deep contentment. He was at peace with the world once more. Good old Van.

What a difference there would be when he awakened to full realization of the changed order of things! What satisfaction and relief!

ASTOUNDING STORIES

Appears on Newsstands

THE FIRST THURSDAY IN EACH MONTH

"That portion of the wall has gone back in time exactly three seconds," he announced.

The Port of Missing Planes

By Captain S. P. Meek

"SO that's the 'Port of Missing Planes,'" mused Dick Purdy as he looked down over the side of his cockpit. "It looks wild and desolate all right, but at that I can't fancy a bus cracking up here and not being found pronto. Gosh, Wilder cracked in the wildest part of Arizona and he was found in a week."

The mail plane droned monotonously on through perfect flying weather. Purdy continued to study the ground Recently transferred from a western run, he was getting his first glimpse of that section of ill repute. Below him stretched a desolate, almost uninhabited stretch of country. By looking back he could see Bellefonte a few miles behind him, but Philipsburg, the next spot marked on his map, was not yet visible. Twelve hundred feet below him ran a silver line of water which his map told him was Little Moshannon Run. As

In the underground caverns of the Selom, Dr. Bird once again locks wills with the subversive genius, Saranoff.

he watched he suddenly realized that the ground was not slipping by under him as rapidly as it should. He glanced at his air-speed meter.

"What the dickens?" he cried in surprise. For an hour his speed had remained almost constant at one hundred miles an hour. Without apparent cause it had dropped to forty, less than flying speed. He realized that he was falling. A glance at his altimeter confirmed the impression. The needle had dropped four hundred feet and was slowly moving toward sea-level.

WITH an exclamation of alarm, Purdy advanced his throttle until the three motors of his plane roared at full capacity. For a moment his air-speed picked up, but the gain was only momentary. As he watched, the meter dropped to zero, although the propellers still whirled at top speed. His altimeter showed that he was gradually losing elevation.

He stood up and looked over the side of his plane. The ground below him was stationary as far as forward progress was concerned, but it was slowly rising to meet him. He fumbled at the release ring of his parachute but another glance at the ground made him hesitate. It was not more than three hundred feet below him.

"I must be dreaming!" he cried. The ground was no longer stationary. For some unexplained reason he was going backward. The motors were still roaring at top speed. Purdy dropped back into his seat in the cockpit. With his ailerons set for maximum lift he coaxed every possible revolution from his laboring motors. For several minutes he strained at the controls before he cast a quick glance over the side. His backward speed had accelerated and the ground was less than fifty feet below him. It was too close for a parachute jump.

"As slow as I'm falling, I won't crack much, anyway," he consoled himself. He reached for his switch and the roar of the motors died away in silence. The plane gave a sickening lurch backwards and down for an instant. Purdy again leaned over the side. He was no longer going either forward or back but was sinking slowly down. He looked at the ground directly under him. A cry of horror came from his lips. He sat back mopping his brow. Another glance over the side brought an expression of terror to his white face and he reached for the heavy automatic pistol which hung by the side of the control seat.

"HE cleared Bellefonte at nine in the morning. Dr. Bird" said Inspector Dolan of the Post Office Department, "and headed toward Philipsburg. He never arrived. By ten we were alarmed and by eleven we had planes out searching for him. They reported nothing. He must have come to grief within a rather restricted area, so we sent search parties out at once. That was two weeks ago yesterday. No trace of either him or his plane has been found."

"The flying conditions were good?"

"Perfect. Also, Purdy is above suspicion. He has been flying the mail on the western runs for three years. This is his first accident. He was carrying nothing of unusual value."

"Are there any local conditions unfavorable to flying?"

"None at all. It is much uninhabited country, but there is no reason why it shouldn't be safe country to fly over."

"There are some damnably unfavorable local conditions, Doctor, although I can't tell you what they are," broke in Operative Carnes of the United States Secret Service. "Dick Purdy was rather more than

an acquaintance of mine. After he was lost I looked into the record of that section a little. It is known among aviators as 'The Port of Missing Planes.'"

"How did it get a name like that?"

"From the number of unexplained and unexplainable accidents that happen right there. Dugan of the air mail, was lost there last May. They found the mailbags where he had dropped them before he crashed, but they never found a trace of him or his plane."

"They didn't?"

"Not a trace. The same thing happened when Mayfield cracked in August. He made a jump and broke his neck in landing. He was found all right, but his ship wasn't. Trierson of the army, dropped there and *his* plane was never found. Neither was he. He was seen to go down in a forced landing. He was flying last in a formation. As soon as he went down the other ships turned back and circled over the ground where he should have fallen. They saw nothing. Search parties found no trace of either him or his ship. Those are the best known cases, but I have heard rumors of several private ships which have gone down in that district and have never been seen or heard of since."

DR. BIRD sat forward with a glitter in his piercing black eyes. Carnes gave a grunt of satisfaction. He knew the meaning of that glitter. The Doctor's interest had been fully aroused.

"Inspector Dolan," said Dr. Bird sharply, "why didn't you tell me those things?"

"Well, Doctor, we don't like to talk about mail wrecks any more than we have to. Of course, the loss of so many planes in one area is merely a coincidence. Probably the wrecked planes were stolen as souvenirs. Such things happen, you know."

"Fiddlesticks!" said Dr. Bird sharply. He raised one long slender hand with beautifully modeled tapering fingers and threw back his unruly mop of black hair. His square, almost rugged jaw, protruded and the glitter in his eyes grew in intensity. "No souvenir hunting vandals could cart away whole planes without leaving a trace. In that case, what became of the bodies? No, Inspector, this has gone beyond the range of coincidence. There is some mystery here and it needs looking into. Fortunately, my work at the Bureau of Standards is in such shape that I can safely leave it. I intend to devote my entire time to clearing this matter up. The ramifications my run deeper than either you or I suspect. Please have all of your records dealing with plane disappearances or wrecks in that locality sent to my office at once."

The Post Office inspector stiffened.

"Of course, Dr. Bird," he said formally, "we are very glad to hear any suggestion that you may care to offer. When it comes, however, to a matter of surrendering control of a Post Office matter to the Department of Commerce or to the Treasury Department, I doubt the propriety. Our records are confidential ones and are not open to everyone who is curious. I will inform the proper authorities of your desire to help, but I doubt seriously if they will avail themselves of your offer."

DR. BIRD'S black eyes shot fire. "Idiot!" he said. "If you're a specimen of the Post Office Department, I'll have the entire case taken out of your hands. Do you mean to cooperate with me or not?"

"I fail to see what interest the Bureau of Standards can have in the affair."

"The Bureau isn't mixed up in it; Dr. Bird is. If necessary, I will go direct to the President. Oh, thun-

der! What's the use of talking to you? Who's your chief?"

"Chief Inspector Watkins is in charge of all investigations."

"Carnes, get him on the telephone. Tell him we are taking charge of the investigation. If he balks, have Bolton go over his head. Then get the chief of the Air Corps on the wire and arrange for an army plane tomorrow. There is something more than a mail robbery back of this or I'm badly fooled."

"Do you suspect—"

"I suspect nothing and no one, Carnes—yet! I'll get a few instruments together to take with us tomorrow. We'll fly over that section until something happens if it takes us until this time next year."

A THREE-SEATED scout plane rose from Langley Field at eight the next morning. Captain Garland was at the controls. In the rear cockpit sat Dr. Bird and Carnes. Inside his flying helmet, the doctor wore a pair of headphones which were connected to a box on the floor before him. Carnes carried no apparatus but his hand rested carelessly on the grip of a machine-gun.

The plane cleared Bellefonte at nine-thirty and bore east toward Philipsburg. Captain Garland kept his eyes on his instrument board and on a map. Less than six hundred feet above the ground, he was following the air-mail route as exactly as possible. Overhead a mail plane winged its way east, three thousand feet above them.

Fifteen minutes brought them to Philipsburg. Captain Garland shot his plane upward a few hundred feet.

"Turn back, Captain," said Dr. Bird into the speaking tube. "Retrace your course a quarter of a mile farther north. At Bellefonte, turn back and go over the same ground another quarter of a mile north. Keep flying back and forth, working your way north, until I tell you to stop."

The plane swung around and headed back toward Bellefonte.

"Of course, we can't tell exactly what route he followed," said the doctor to Carnes, "but he was new on this run and it is safe to assume that he didn't stray far. We'll quarter the whole area before we stop."

Carnes watched the ground below them carefully. There was nothing about it to distinguish it from any other wooded mountainous country and his interest waned. He glanced aloft. The mail plane had disappeared in the distance and the sky was clear of aircraft. He turned again to the ground. It looked closer than it had before. He turned and looked at the duplicate altimeter. The plane had lost nearly a hundred feet elevation.

"THERE'S something wrong about this plane, Doctor," came Captain Garland's voice through the speaking tube. "It doesn't behave like it should."

"I guess we've found what we were looking for, Carnes," said Dr. Bird grimly. "What seems to be the matter, Captain?"

"Blessed if I know," was the answer. "It feels like a drag of some sort, like an automobile going through heavy sand. We're slowing down, though I am giving her all the gun I've got!"

"Cut your motor!" said the doctor shortly. He bent over the duplicate instrument board as the roar of the motor died away. Carnes rose and looked over the side.

"Look, Doctor!" he cried in a strained voice. Directly below them yawned a hole sixty feet in diameter and extending down into the bowels of the earth. The plane hovered over the hole for a moment and then slowly descended into it.

"What is it?" cried the detective.

"It's the secret of the Port of

Missing Planes," replied Dr. Bird. Throw off your parachute. Keep your gun and light handy but don't fire unless I do first. The same holds good for you, Captain."

The plane sunk until it was fifty feet below the level of the ground. Carnes looked up. Gradually the circle of sky became blurred and hazy as though the air were heavy with dust. The rasp of Dr. Bird's flashlight key aroused him and he hastily wound his own. The haze above them grew thicker. Suddenly the light died and then came darkness, a darkness so thick and absolute that it bore down on them like a weight. Dr. Bird's light stabbed a path through it.

THEY were in a tunnel or tube reaching into the ground. The sides were smooth and polished, as though water worn. The plane sank deeper and deeper into the earth. Suddenly Dr. Bird's light went out.

"What's the matter, Doctor?" asked Carnes, "did your light fail?"

"No," came a strained voice. "I turned it out."

"Why?"

"I don't know. Light yours."

Carnes reached into his pocket. Dr. Bird could hear his breath come in panting sobs as though he were exerting his whole strength.

"I can't do it, Doctor," he gasped. "I want to, but some power greater than my will prevents me."

"Are you affected, Captain?" asked the Doctor.

"I—can't—move," came in muffled accents from the front cockpit.

"Some power beyond my knowledge has us in its grasp," said the doctor. "All we can do is sit tight and see what happens. We are no longer falling at any rate."

From the forward cockpit came a rustling sound. There was a slight jar in the ship, and it gave as though a weight had been applied to one side.

"What are you doing, Garland?" asked the doctor sharply.

There was no reply. Again came the rustling sound. The ship gave a sudden lurch as though a weight had left the side. Carnes suddenly spoke.

"Good-by, Doctor," he said. "I'm going over the side."

"I have been fighting it but I'm going myself in a minute," replied the doctor grimly. "Something is pulling me over. It's the same power that keeps me from turning on my light."

"It's perfectly safe to go over," said Carnes suddenly. "The plane is resting on a solid base."

"I have the same feeing. Catch hold of my belt and let's go."

THEY climbed over the side of the plane and dropped to the ground. Their descent made absolutely no sound. Dr. Bird stopped and felt the floor.

"Crepe rubber, or something of the sort," he murmured. "At any rate, it's noise and vibration proof."

"Now what?" asked Carnes.

"This way," replied the doctor confidently. "I'm beginning to get the hang of understanding this. The way is perfectly level and open before us. Keep your hand on my shoulder and step right out."

"How do you know where we're going?"

"I don't, but something tells me that the road is level and open. It is the same thing that brought us over the side. I can't explain it but it is some sort of a telepathic control exerted by an intelligence. Whether the sending mind is reinforced by instruments I don't know, but I rather fancy not."

"Where is Garland?"

"He went off in another direction. I could feel the power that guided him although it was not directed at us. Something tells me that he is safe for the present."

For half a mile they made their way through the darkness before they stopped. This time Carnes could plainly understand the command which came to both of them.

"There is a table before us," said Dr. Bird. "Lay your flashlight and pistol on it."

Carnes struggled against the order but the power guiding him was stronger than his will. He strove to turn on his light. When he could not, he tried to cock his pistol. With a sigh, he laid his gun and light on the table before him. Without words, the two men walked forward a few feet and sat confidently down on a bench that something told them was there.

FOR a moment they sat quietly. A cry, choked in the middle, came from the detective's throat. Cold clammy hands touched his face. He strove again to cry out, but his voice was paralyzed. The hands went methodically over his body, evidently searching for weapons. Mustering up his will, Carnes made a grab for one of them. His captor apparently had no objection to the detective's action for Carnes seized the hand without effort. But he almost dropped it. The hand was as large as a ham. He reached for the other hand but could not locate it. A movement on the part of his captor brought it to him and he made the startling discovery that the palms were directed outward. The hand had only four fingers, which were armed with long curved claws instead of nails. Carnes ran his hand up the palm to search for a thumb but found none. He found, however, that, while the hands were naked, the wrists were covered with short thick fur.

"Doctor!" he cried, "there's—"

Again came the overpowering will and his speech died away in silence. He sat dumb and motionless while his captor moved over to Dr. Bird. A second animal came forward and felt the detective over. He was not allowed to move this time, nor was he while a third and fourth animal went carefully over him. The four drew back some distance.

"Doctor," whispered Carnes as the influence grew fainter.

"Shh!" was the answer, and as the doctor's demand for silence was reinforced by another wave of the paralyzing power, Carnes had no choice. As he sat there silent, the power which held him again seemed to grow less. He found that he could move his arms slightly. He edged forward to get his gun and light. Before he reached them, a beam of light split the darkness. Dr. Bird stood, electric torch in hand, staring before him.

At a distance of a few feet stood a group of half a dozen animals about the height of a man as they stood erect on their short hind legs. They were covered with heavy brown fur. Their lower limbs were thin and light, but their shoulders and forelegs were heavy and powerful. Their forepaws, which had the palms facing outward, were armed with the long wicked claws he had felt. No visible ears protruded from the round skulls. Their heads appeared to rest between their shoulders, so short were their necks. Their muzzles were long and obtusely pointed. Through grinning jaws could be seen powerful white teeth.

"Talpidae!" cried Dr. Bird. "Carnes, they are a race of giant intellectual moles!"

DESPITE the fact that they had no visible eyes, the creatures were strongly affected by the light. They dropped on all fours and turned their backs to the scientist and the detective. Two of them scurried away down a long tunnel which opened from the room in which they stood. Dr. Bird turned his light up and swept the room. It was

roughly circular, a hundred feet in diameter, with a roof ten feet high. Dozens of tunnels led off in every direction.

"Your light, Carnes, quick!" cried the doctor in a strained voice. Carnes reached toward the table for his light. Before he could reach it he was frozen into immobility. From the corner of his eye he could watch the doctor. Dr. Bird was struggling to bring the light back on the moles which stood before them. Great beads of sweat stood out on his forehead. Inch by inch he moved the light closer to his goal, but Carnes could see that his thumb was stealing up toward the switch button. His breath came in sobs. Suddenly the light went out.

For some time the two men sat motionless on the bench unable to speak or move. One of the moles stepped before them and gave a mental command. The two rose to their feet. For a mile or more they followed their guide, then, at a silent command, they turned to the right for a few steps and stopped. In another moment, the numbing influence had departed.

"Are you all right, Carnes?"

"Yes, right as can be. Doctor, what were those things? Where are we? What's it all about?"

"We'll find out in time, I guess," replied the doctor with a chuckle. "Carnes, isn't this the darnedest thing we've ever been through? Captured half a mile underground by a race of giant talpidae before whose mental orders we are as helpless as children. Did you understand any of their talk?"

"Talk? I didn't hear any."

"Well, mental conversation then. They made no sound."

"No. All I understood was the orders I obeyed."

"I GOT a great deal of it," the doctor said. "We are evidently in or near a sort of central community of these fellows. They spoke; thought is a better word; they thought of doing away with us but decided to wait until they consulted someone with more authority. You see, we are not airplane pilots. Captain Garland was taken at once to the place where they have other aviators imprisoned."

"What do they want of pilots underground?"

"I couldn't quite get that. There was another thought that I am not sure that I interpreted correctly. If I did, there is some man of the upper world down here in a position of considerable authority among them. He has some use for pilots, but what use, I don't know. We are to be held until he is consulted."

"Who could it be?"

"I can only think of one man, Carnes, and I hope I'm wrong. I don't have to name him."

"You mean—?"

"Ivan Saranoff. We haven't heard of him or had any activity from him for the last eight months. We know that he had a subterranean borer with which he has penetrated deep into the earth. Isn't it possible that he has, at some time in his explorations, come into contact with these fellows and made friends with them?"

"It's possible, Doctor, but I hoped we had killed him when we destroyed his borer."

"So did I, but he seems to bear a charmed life. Several times we have thought him dead, only to have him show up with some new form of devil's work. It is too much to hope that we have succeeded in doing away with him. Did you notice one thing? Those fellows were helpless while I held the light on them. The one which was holding us captive got so interested in the discussion about our fate that he momentarily forgot us. That was when I got my light. Until I turned the light away from them, we were free men."

"THAT'S right," answered the secret service man.

"Remember that. The next time we get a light on a bunch of them, hold them in the beam until we can make terms."

"If we ever get hold of a light again."

"I have a light they didn't get, probably because I didn't think of it while they were around. It is one of those fountain pen battery affairs and they probably took it for a pen. I won't turn it on now, partly to save it and partly not to let them know we have it. Let's see what our prison is like."

They felt their way around the room. It proved to be eight paces by ten in size. Like the tunnels it was floored with crepe rubber or some similar substance which gave out no sound of footsteps, yet was firm underfoot. The room was furnished with two beds, a table and two chairs. There was no sign of a door.

"That's that," exclaimed the doctor when they had finished their exploration. "I'm hungry. I wonder when we eat. Hello, here comes one of the fellows now."

Carnes made no reply. As the doctor's speech ended, a wave of mental power enveloped the room. One of the moles entered, moved over to the table for an instant and then left the room. An earthly odor of vegetables pervaded the room.

"My question is answered," said the doctor. "We eat now."

He moved to the table. On it had been placed dishes containing three different types of roots. Two of them proved to be palatable, but the third was woody and bitter. The prisoners made a hearty meal from the two they relished. For an hour they sat waiting.

"Here they come again!" exclaimed the doctor. "We are going before the person I spoke of. Can't you get their thoughts?"

"No, I can't, Doctor. I can understand when I get a command, but aside from those times everything is a blank to me."

"My mental wave receiver, if that's what it is, must be attuned to a different frequency than yours, for I can hear them talking to one another. I guess I should say that I can feel them thinking to one another. At any rate, they want us to follow. Come along, the road will be open and level."

THE doctor stepped out confidently with Carnes at his heels. For half a mile they went forward. Presently they halted.

"We are in a big chamber here, Carnes," whispered the doctor, "and there is someone before us. We'll have some light in a minute."

His prophecy was soon fulfilled. A vague glimmer of light began to fill the cavern in which they stood. As it grew stronger they could see a raised dais before them on which were seated three figures. Two of them were the giant moles. Each of the moles wore a helmet which covered his head completely, with no sign of lenses or other means of vision. It was the central figure, however, which held the attention of the prisoners.

Seated on a chair and regarding them with an expression of sardonic amusement was a man. Above a high forehead rose a thin scrub of white hair. Keen brown eyes peered at them from under almost hairless brows. The nose was high bridged and aquiline and went well with his prominent cheekbones. His mouth was a mere gash below his nose, framed by thin bloodless lips. The lips were curled in a sneer, revealing yellow teeth. The whole expression of the face was one of revolting cruelty.

"So," said the figure slowly, "fate has been kind to me. My friends, Dr. Bird and Operative Carnes have

chosen to pay me a long visit. I am greatly flattered."

The thin metallic voice with its noticeable accent struck a familiar chord.

"Saranoff!" gasped Carnes.

"Yes, Mr. Carnes, Saranoff. Professor Ivan Saranoff, of the faculty of St. Petersburg once. Now merely Saranoff, the scourge of the bourgeois."

"I HOPED we had killed you," murmured Carnes.

"It was no fault of Dr. Bird's that he failed," replied the Russian with an access of malevolence in his voice. "His method was a correct one. Merely the fortuitous fact that we had just pierced one of the tunnels of the Selom, and I was away from my borer exploring it, saved me. You did me a good turn, Doctor, without meaning to. You destroyed an instrument on which I had relied. In doing so, you unwittingly delivered into my hands a power greater than any I had dreamed of—the Selom."

"What can a mental cripple like you do with blind allies like them?" asked Dr. Bird with a contemptuous laugh. The Russian half rose from his seat in rage. For a moment his hand toyed with a switch before him. The sardonic sneer came back into his face and he dropped back into his seat.

"You nearly provoked me to destroy you, Doctor," he said, "but cold calculation saved you. Since you will never return to the upper world, save when and as I decree, I have no objection to telling you. The Selom are not blind. Their eyes are under the skin as is the case with many of the talpidae, but for all that they can see very well. Their eyes function on a shorter wave than ours, a wave so short that it readily penetrates through miles of earth and rock. This cavern is now flooded with it. Visible light, the light by which we see, is unsuited to their eyes, hence the helmets which you see. They can see through those helmets as well as you or I can see through air."

"What do you intend to do with us?"

"Ah, Doctor, there you hit me in a tender spot. I have a sore temptation to close this switch on which my hand rests. Were I to do so, both you and Mr. Carnes would vanish forevermore. I have, however, conceived a very real affection for you two. Your brains, Doctor, working in my behalf instead of against me would render me well-night omnipotent. Mr. Carnes has a certain low cunning which I can also use to advantage. Both of you will join me."

"YOU might as well close your switch and save your breath, Saranoff, for we will do nothing of the sort," replied the doctor sharply.

"Ah, but you will. So will Mr. Carnes. I had no hopes that you would join me willingly. In fact, I am pleased that you do not. I could never trust you. All the same, you will join my forces as have the others whom I have brought into the hands of the Selom. I have ways of accomplishing my desires. It pleases my fancy, Doctor, to use your brains in aiding me in my scientific developments. You will enjoy working with the scientists of the Selom. Among them you will find brains which excel any to be found on the surface of the earth, since we two are below. Already I have learned much from them. You, Mr. Carnes shall be taught to pilot an airplane. When my cohorts go forth from the realms of the Selom to establish the rule of Russia, you will be piloting one of the planes. Your first task will be to learn to fly."

"I refuse to do anything of the sort!" said Carnes.

"I will not be ready to have your flying lessons started until to-mor-

row," replied the Russian, "and you will have until then to reconsider your rash decision. It will be much easier for you if you obey my orders. If you still refuse to-morrow, you will pay a visit to the laboratory of the Selom. When you return your lessons will be started. You will now be taken to your cell. I have use for Dr. Bird this afternoon."

"I won't leave Dr. Bird and that's flat!" exclaimed Carnes. Dr. Bird interrupted him.

"Go ahead, Carnesy, old dear," he said lightly. "You might just as well toddle along under your own power as to be dragged along. You have a day for reflection, in any event. I daresay I'll see you again before they do anything to you."

Carnes glanced keenly at the doctor's face. What he saw evidently reassured him for he turned without a word and walked away. The light grew gradually dimmer until darkness again reigned in the cavern.

"Come, Doctor," said Saranoff's voice. "We have work to do."

CARNES sat alone in his cell for hours. The darkness and loneliness wore on him until he felt that his nerves would crack. Not a sound came to him. He threw himself on one of the beds and plugged his ears with his finger tips in an attempt to keep the silence out. Then a cheerful voice sounded in the cell and a friendly hand fell on his shoulder.

"Well, Carnesy, old dear," said Dr. Bird, "have you been lonesome?"

"Dr. Bird!" gasped Carnes in tones of relief. "Are you all right?"

"Right as can be. I learned a lot this afternoon. For one thing, you're going to start flying lessons to-morrow and you're going to do your best to become an expert pilot in a short time. It is the only thing to do."

"And fly a plane for Saranoff?"

"I hope not. The only way to avoid that very thing is to keep your mentality unimpaired so that I can call on you for help when I need it. If the Selom operate on you, you will be useless to me."

"Operate? What do you mean?"

"I'll tell you. The Selom are a very old and highly civilized people. For ages they have possessed scientific knowledge for which the upper-world scientists are now blindly groping. Among other things, they have a perfect knowledge of the workings of the brain. If they operate they will remove from your brain every speck of memory you have of past events, leaving only those things that will be useful to Saranoff. You will be his complete slave. In that condition you will be taught to fly a plane. When the time comes, you will fly one with no remembrance of anything which happened prior to the operation and with no will but his. It will be easier to teach you flying in your natural state if you are willing. You will be willing."

"If you wish it, Doctor."

"I DO wish it, most decidedly," Dr. Bird went on. "Obey every order they give you. You will find that the Selom are an enlightened and civilized race. They are very kindly and would willingly harm no one."

"Then why have they taken up with Saranoff?"

"He is the first man with whom they have come into contact. He has told them a horrible tale of conditions on the surface, and they have swallowed it, hook, line and sinker. They believe that he is going to establish a new order of happiness and plenty for all with the aid of his gang of cutthroats from Russia. If they had the slightest inkling of the true state of affairs, they would turn on him in an instant."

"Why don't you tell them?"

"Remember that I am a stranger here and he has poisoned their minds

against me. Although the mind of an ordinary men is an open book to them, they cannot read Saranoff's secret thoughts against his will. They can't read mine either, for that matter. I am working in the laboratory and I will pick up a great deal. When the time comes, we will strike for our liberty and for the safety of the world."

"Did you learn Saranoff's plans?"

"Yes. He is gathering planes and pilots in the underground caverns of the Selom. When he gets enough, he will bring men from Russia to man the planes. What could the United States, or the world for that matter, do against a fleet of hundreds, possibly thousands, of the best planes, equipped with deadly weapons unknown to their science? That menace confronts us and we must remove it. To give you some idea of the power of the Selom, this afternoon Saranoff and I with one assistant opened a cavern in the solid rock three miles long and a mile wide and over six hundred feet in height."

"Three men! How on earth did you do it?"

"Two men and one mole. We did it with a ray, the secret of which only the Selom and Saranoff know."

"YOU have told me a disintegrating ray is an impossibility," objected Carnes.

"It is. This was not a disintegrating ray. Carnes, either I am crazy or the Selom have solved the secret of time, the fourth dimension. I haven't been able to grasp the whole thing yet. What I think we did was to remove that rock a distance, perhaps only a millionth of a second, forward or back into time. At any rate it ceased to exist, yet they can bring it back unchanged at will. That was the way they captured our plane. They sent out a magnetic ray of such power that it stopped our plane in midair and brought it to the ground. They removed the rock from beneath us and lowered us into the hole. By reversing the process they restored things to their original condition. All of these tunnels and rooms were made in that way."

"I still don't understand how they did it."

"I don't either, but I hope to in time. Now let's go to bed. It's late. To-morrow you will start your lessons with Captain Garland as an instructor. He won't know you for he was operated on this afternoon. Do your best to become a pilot. When I get ready, I want you with me in full possession of all your faculties."

The next morning the two prisoners separated and went to their duties. In the cavern which Dr. Bird had described, Captain Garland was waiting beside the plane he had flown. He did not know Carnes, but he still knew how to fly. Declining to enter into any conversation, he started expounding the theory of flying to the detective. Carnes remembered Dr. Bird's words and applied himself wholeheartedly. For four hours they worked together. At the end of that time the light faded in the cavern and Carnes was led by an unseen guide back to his cell. He threw himself on a bed and awaited Dr. Bird's return.

"I have learned a few more things about the Selom," said the doctor when he entered the cell several hours later. "We are in their largest community. They have cities or warrens scattered all over the world. Each city has its own ruler, but the whole race are ruled by an overlord or king who habitually lives here. He is away visiting a community under northern Africa just now, but he will be back in a few days. The Selom are sincere in their desire to help the upper world. They feel great pity for mankind in view of the conditions Saranoff has described to them. When the king re-

turns, I plan to make a direct appeal to him. In the meantime, go on with your flying lessons. How did you make out to-day?"

THE second day was a repetition of the first, as were the third and fourth. A week passed before Dr. Bird entered the cell in evident excitement.

"Has Hanac brought our evening food yet?" he asked anxiously.

"No, Doctor."

"Good. Take this light. As soon as he enters throw the light full on him and hold him until I work on him. We've got to make our escape?"

"Why?"

"The king is due back to-morrow. Saranoff is frightened at the good impression I have made on the Selom. He is supreme in the monarch's absence, so he plans to operate on both of us before he returns. He is afraid to allow me to see the king with an unimpaired intellect and memory. Shh! Here comes Hanac." The door to their cell opened noiselessly. When the mole who brought their food was well inside, Carnes turned on the tiny flashlight. The mole dropped on all fours and tried to turn its back. Dr. Bird sprang forward. For an instant his slim muscular fingers worked on the mole's neck and shoulders. Silently the animal sank in a heap."

"Come on, Carnes," cried the doctor. "Turn off the light."

"Did you kill him, Doctor?" asked Carnes as he raced down a pitch dark corridor at the scientist's heels.

"No, I merely paralyzed him temporarily. He'll be all right in a day or so. Turn here."

FOR ten minutes they ran down corridor after corridor. Carnes soon lost all track of direction, but Dr. Bird never hesitated. Presently he slowed down to a walk.

"It's a good thing I have a good memory," he said. "I planned that course out from a map, and I had to memorize every turn and distance of it. We are now behind your flying hall and away from any of the regular dwellings of the Selom. Straight west about four miles is one of the time-ray machines with a guard over it. Aside from them, there isn't a mole between here and Detroit."

"What are we going to do, Doctor?"

"Keep out of their way and avoid recapture if we can. If we merely wanted to escape we would try to get possession of that time-ray machine and open a road to the surface. However, I am not content with that. I want to stay underground until Astok, their king, returns. When he comes, we will surrender to him."

"Suppose they operate without giving us a chance to present our side of the affair."

"If they do, Saranoff wins; but they won't. The more I have seen of the Selom, the more impressed I am by their sense of justice. They'll give us a hearing, all right, and a fair one."

For two hours the doctor led the way. At the end of that time he stopped.

"We've gone as far as we need to," he said. "They'll undoubtedly send out searching parties, but if we can avoid thinking they won't be able to find us. The tunnels are a perfect labyrinth. If you care to sleep, go to it. We'll be safer sleeping than awake, for we won't be sending out thoughts so fast."

DR. BIRD threw himself down on the rubber floor of the tunnel and was soon asleep. Carnes tried to follow his example, but sleep would not come to him. Frantically he tried to think of nothing. By an effort he would sit for a few minutes with his mind a conscious blank, but thoughts would throng in in spite of

him. Time and again he brought himself up with a jerk and forced his mind to become a blank. The hours passed slowly. Carnes grew cramped from long immobility and rose. A sudden thought intruded itself into his mind. "I might as well throw that light away," he murmured to himself. "It will be no good now. The Selom won't hurt us if they do catch us."

He reached in his pocket for the light. He was about to hurl it from him when a moment of sanity came to him. He stared about. The impulse to hurl the light away came stronger. He strove in vain to turn it on.

"Doctor!" he cried suddenly. "Wake up! They're after us!"

With a bound, Dr. Bird was on his feet.

"The light!" he cried. "Where is it?"

"In — my — hand," murmured Carnes with stiffening lips.

Dr. Bird seized the light. A beam stabbed the darkness. Less than fifty feet from them stood two moles. As the light flashed on Carnes regained control of himself.

"Take the light, Carnes," snapped the doctor. "I've got to put these fellows to sleep."

Slowly he advanced toward the motionless Selom. He had almost reached them when the light flickered out. He turned and raced at full speed toward the detective. Carnes was standing rigid and motionless. Dr. Bird took the light from his hand. Despite the almost overpowering drag on his mind, he managed to turn it on. He swung the beam around in a circle. Besides the two Selom he had seen before, the light revealed a pair standing behind him. As the light struck them, the numbing influence vanished for an instant from the doctor's mind. He moved a step forward and then halted. The moles behind him were hurling waves of mental power at him. Again the light cleared him for an instant, but he got a brief glance of other moles hurrying from every direction.

"The jig's up, I guess," he muttered. He strove to free himself by the use of his light, but the tiny battery had done its duty, and gradually the light grew dimmer. The influence grew too strong for him. With a sigh he shut off the feeble ray and hurled the light from him. The moles closed in.

"All right," said the doctor audibly. "We'll go peaceably."

As he spoke the paralyzing power was withdrawn. With Carnes at his side he retraced the route he had taken from the cell. Before they reached it they turned off. Dr. Bird realized that they were treading the familiar path to the laboratory.

Outside the laboratory the Selom halted. A wave of mental power enveloped the prisoners and they remained silent and motionless while their escort withdrew. From the laboratory came three of the Selom scientists. As the laboratory door opened they could see that it was bathed in a flood of light, and that the moles wore helmets covering their heads. They moved inside. Clad in a white gown stood Saranoff.

"So, my friends, you would run away and leave me, would you?" gloated the Russian. "And just when I had planned a very beneficial operation for you! I will remove permanently from your brains all the delusions which now encumber them, and for your own puny wills I will substitute my own."

The power which had held the prisoners silent disappeared.

"You have caught us, Saranoff," said Dr. Bird. "I know the power you wield and that you are making no idle boast. I appeal, however, to these others, my friends. The opera-

tion you are planning to perform is not a routine one. It is one that should have the sanction of the king before it is done. I appeal from you to him."

"He is far away," laughed Saranoff. "When he returns, your plea will be presented to him, but it will be too late to do you any good. You are right, Doctor—I do not plan a mere routine operation. Not only will I remove your memory, but I'm going to use the time-ray on you and banish forever into the unknown a portion of your brains. Without knowing which adjustment I make of the infinite number possible, no one, not even the king, can ever recall it."

DR. BIRD turned to the Selom scientists and hurled his thoughts at them.

"This man intends to commit a horrible crime," he thought, "and one which he has no authority to perform. To you I appeal for justice. Bid him wait until Astok returns, and let him be the judge as to whether it shall be done. Jumor, you know me well. You know that my brain is the equal of one of the Selom. Even you cannot read my thoughts against my will. Are you willing to see that brain destroyed. Astok will be here soon and nothing will be lost by a short delay."

"He thinks truly," was the answering thought of Jumor. "It would be better to wait."

"We will not wait," crashed Saranoff's thought into their consciousness. He killed Hanac when he escaped, and his punishment shall be as I have decreed. Did not the king give me full power while he was away?"

"It is true that he ordered us to obey this man in all things dealing with upper-world men," thought Jumor. "If it is true that he killed Hanac his punishment is doubtless just."

"I did not kill Hanac," returned the doctor. "He is paralyzed and will be all right in a few hours, if he isn't already. I demand that you wait until Astok returns. When an appeal is made to him, no other may judge. So says the Selom law."

"That is true," replied Jumor. "We will wait until the king returns."

"We will *not* wait," came Saranoff's thought. "The king delegated to me his powers during his absence, as far as all the world, save the Selom, were concerned. Were it one of the Selom appealing to the king, I would be powerless before the appeal. These are not bound by Selom law and are not entitled to its benefits. We will operate at once."

"Then you will operate alone," retorted Jumor. "I will not assist you."

"I need none of your help," thought Saranoff. "Asmo and Camol, will you help me? If you refuse I will report to Astok that you have disobeyed and defied his chosen delegate."

"We had better assist him, Jumor," thought Asmo. "Astok did delegate his authority. I am not of the nobility and I dare not refuse to help."

"Suit yourself, Asmo," replied Jumor. "I refuse to assist, and will appeal to Astok against him."

THE third mole hesitated.

"You are higher in rank than we are, Jumor," he thought at length, "and like Asmo, I dare not resist him. I heard the king give this upper-earth man his authority while he was away. I will assist."

"And I will leave the room," retorted Jumor.

He moved to a door and threw it open. At the threshold he paused and sent back a final thought.

"I will appeal to Astok, our ruler. I will send now a message to him to hurry home that he may judge between us."

The door closed behind him. Saranoff chuckled audibly.

"Good-by, Carnes," said Dr. Bird sadly. "This devil can do all he says he can, and more. I'm sorry I brought you and Garland into this mess."

"Oh, well, it can't be helped, Doctor," replied the detective with an attempt at cheerfulness. "What is he going to do to us?"

"He'll have to use instruments for what he plans," said the doctor. "Ordinarily a routine mental operation is performed without the use of extraneous power. The mind of the operator is electrically connected to the mind of the victim. By means of thought waves the operator banishes from the mind of the subject such portions of his memory and mentality as he chooses. He may then substitute other things in place of what he has removed. Any of the Selom could operate on you, but I doubt whether Jumor himself could do it successfully on me without aid from power. Here come the instruments."

ASMO and Camol took from a cabinet on the side of the wall what looked like a cloth helmet. Attached to it were a dozen wires which they connected to a box on a table. The box was made of crystal and inside it could be seen a number of vacuum tubes and coils of various designs. Other leads ran to a similar helmet which Asmo placed on Saranoff's head. A heavy cable ran to a switch on the wall.

As Camol closed the switch the tubes in the box began to glow with weird lights. Violet, green and orange streamers of light came from them to dance in wild patterns on the laboratory walls. For five minutes Saranoff made adjustments to dials on the front of the crystal box. The colored lights died away and a gentle golden glow came from the apparatus. He threw off the helmet. Camol left the laboratory and returned with a large coil on the top of which was mounted a parabolic reflector. A device like a clock on the front of the coil was constantly marking the passage of time. The dial had two indicators which were together. Saranoff chuckled.

"You may not have seen this device work, Doctor," he said. "In order to let you know what you are facing, I will demonstrate."

He turned the reflector so that it bore on the wall. He adjusted the moving dial so that the two indicators were no longer together. As he closed a switch, the wall before the reflector vanished. Saranoff turned off the power.

"That portion of the wall has gone back in time exactly three seconds." he announced. "As far as the present is concerned, it has ceased to exist. It is following us through time three seconds behind us, but in all eternity it will never catch up unless I aid it. Since the exact time is known, it can be restored. If I were to alter this adjustment ever so little, it could never be recalled. Watch me."

HE again closed the switch, this time in a reverse direction. The wall instantly filled up as it had been before. He moved the time dial so that the two indicators coincided.

"After I have sent a portion of your physical brain into the past or the future as the fancy strikes me, I will change the adjustment of that dial. Since there are an infinite number of adjustments to which I might have set it, the chances that any one could ever duplicate my setting and restore it are the complement of infinity, or zero," he said. "I am now ready to remove your memory. If the impossible should happen and your physical brain be restored it would be useless. Asmo, adjust the helmet. I will operate on my friend, the Doctor, first."

Carnes strove to rush to Dr. Bird's assistance, but he was helpless before the force of Camol's will. Asmo adjusted the helmet to Dr. Bird's head and buckled it firmly in place. With an evil grin, Saranoff donned the other helmet.

"Good-by, Dr. Bird," he said mockingly. "You will continue to see me, but you won't know me, except as your master."

HIS hand reached for the switch. It had almost closed on it when Saranoff stopped convulsively. He sat motionless while the laboratory door opened and Jumor entered the room. He was followed by another mole. The newcomer was fully six inches taller than the others. His head was hidden by a helmet, but around his arms he wore strings of sparkling jewels.

"Ivan Saranoff, what means this?" his powerful thoughts dominated the room.

"I was merely engaged in rectifying some of the mental errors of this man of the upper earth," explained the Russian eagerly. "It is merely a routine operation such as you gave me authority to perform."

"An operation which uses power is not routine," replied the king. "I am told that this upper-earth man has a brain equal to those of my most advanced scientist. I am also told that you planned to do more than rectify his mental errors."

"You have been falsely informed. I was merely about to adjust his memory."

"Then what means this?" The king pointed to the time-ray machine.

"That was brought here in order that it could be used when you returned," thought the Russian eagerly. "This upper-earth man killed Hanac when he brought him food."

The door opened and Hanac entered.

"Oh, Astok," objected Hanac's thoughts, "when these upper-earth men had me at their mercy, with a light, they spared me. They paralyzed me for a time so that they might escape but they did it in such a manner that no harm came to me."

"So Jumor told me," replied the king. "Release them."

IN an instant Carnes was on his feet removing the helmet from Dr. Bird's head. The doctor struggled to his feet.

"Dr. Bird," thought the king, "can you communicate with me easily?"

"Yes, Your Majesty, but may I ask that you alter the vibration period of my comrade, Mr. Carnes? He cannot understand you with his present low period."

The king stepped to the box with which Saranoff had been working. In response to his commands the helmet which had been on Dr. Bird's head was placed on the detective. The king made a few adjustments to the dials and signalled for the helmet to be removed.

"Can you understand me, Mr. Carnes?" he asked mentally.

The question leaped with startling clearness into the detective's head. Carefully he framed his answer.

"I can understand you," said the king. "I will now sit in judgment on the appeal made to me. Dr. Bird tell me your story."

With eloquent thoughts, Dr. Bird poured forth the history of the upper world. He told of the great war and the collapse of the Russian monarchy. He traced history to the fall of the moderate party and the rise of the Bolsheviki. He described the horrible conditions existing in Russia. At the end he reviewed the long battle he and Carnes had fought against Saranoff. When he had finished, the king questioned Carnes.

The detective repeated the story in different words and the king turned to Saranoff. From the Russian's mind came a tissue of distorted facts and downright lies. He denied

or twisted around everything that the detective and the scientist had said. When he had done with his tale, Astok sat in secret thought for a few minutes.

"The tales you tell me are so far apart that I can give credence to none of them," he announced at length. "There is but one solution. Although they are never used, for the Selom have forgotten the meaning of a falsehood, we have instruments which will drag the truth from the brain of a liar. They are powerful and their use may easily be fatal. If a man gives forth the contents of his brain willingly, the process is not painful. If he tries to conceal anything, it is torture. Will you willingly submit your brains to the searching of this instrument?"

"Gladly," came Dr. Bird's thought and Carnes reechoed it.

"And you, Ivan Saranoff?" demanded the king.

"I will not submit," thought the Russian sullenly.

"You will be examined whether you submit willingly or not," replied Astok. "I am going to learn the truth though I kill you all to get it."

AT the king's order, Jumor hastened from the laboratory. He returned in a few minutes with an apparatus similar to the one which Saranoff had planned to use on Dr. Bird, but larger, and with more dials on the crystal box. At a command from the king, Dr. Bird donned the helmet.

The king manipulated switches and dials. Around Dr. Bird's head glowed a halo of crimson light. Twice an expression of momentary pain passed over his countenance. After half an hour, Astok cut off the power and nodded to Carnes.

"Don't try to hold anything back, Carnesy," said Dr. Bird sharply. "You couldn't if you tried, and the process is very painful, I can assure you."

With the helmet on his head the detective sat for ten minutes while the Selom king went through his brain. A dozen times he shrieked in agony but his moments of suffering were short. The king removed the helmet.

"Your minds agree well," he thought. "Now I will examine the mind of my friend."

The helmet was strapped on Saranoff. Instantly an expression of the utmost anguish crossed his face. Shriek after shriek of agony came from his writhing lips. Relentlessly the king applied more power. The cries of the Russian grew heartrending. Suddenly he grew rigid and slumped forward in his chair. Astok impassively manipulated his instrument. After half an hour, he opened the switch and removed the helmet. Under the ministrations of Jumor the Russian revived. The king sat in secret thought for an hour.

"I have examined the brains of all of you," he announced at length, "and I find hopeless contradictions. Each of you believes thoroughly in his own social order. Both tell me of hopeless misery on the part of a large portion of his people. Both tell of horrible wars and suffering beyond my comprehension. The thoughts of all of you teem with modes of bringing death to your fellow beings. Your entire science has been perverted to the ends of destruction. Nothing of the sort can be realized by the Selom where truth, justice and mercy prevail. Each of you holds that his form of government is better than the other, and will cause less suffering and misery than the others. None of you hold out hope of happiness for your fellow beings. I do not know which system is less obnoxious. My decision is made. The Selom will not interfere in the affairs of the upper-earth. You may fight out your battles without aid and without interference.

"I will operate on both Ivan Saranoff and Dr. Bird. I will remove from their minds all knowledge of our science and instruments and leave them in the same condition that they were when they entered my realms. Each of you will then be returned to upper-earth, Ivan Saranoff to Russia, Dr. Bird and Mr. Carnes to the United States. The pilots, whom I hold prisoners, will have their mentalities restored and be returned to their homes. The planes we have captured, I will send off into time so that they can never be used for the misery of upper-earth men again. Jumor, you will carry out these orders."

"I WISH I could remember how that time machine was built and operated," said Dr. Bird reflectively, as he sat in his private laboratory in the Bureau of Standards some time later, "but Jumor did his work well. I can't even remember what the thing looked like."

"Well, Doctor, our trip below wasn't a loss. We removed a very real menace to the established order of things and we have got rid of Saranoff temporarily. It will take him some time to return here from Russia."

"Three weeks or less," said Dr. Bird pessimistically. "However, we have gained one other thing. Did you notice this?"

He pulled what looked like a watch from his pocket. Carnes regarded it with a puzzled expression.

"No, Doctor, what is it?"

"It is a very small camera which takes pictures one-half inch by seven-eighths. I had several opportunities to use it. I wasn't sure that it would work on such short waves, but it did. When Saranoff tries to return to this country, he will find that every immigration inspector and every member of the border patrol has an excellent likeness of him. That may hinder his entrance into the country for a little while."

A CLASSIFICATION OF THE UNIVERSE

A CLASSIFICATION of everything in the universe, from the smallest thing yet measured, the electron, less than a millionth of a millionth of an inch in extent, to the biggest, a star system of a thousand million trillion miles, was described recently by Prof. Harlow Shapley of Harvard in a lecture at the commerce center of the College of the City of New York.

Looking forward to a time when man will be able to measure even smaller things than the electron and larger than the greatest star system, Prof. Shapley explained that he had left the classification "open at both ends."

Man, Prof. Shapley said, occupies a very small place in all this system, although, beside an electron or an atom, he is not so negligible, at that.

"The survey," it was explained, "aims toward giving perspective. It gives a sane and modest view of man's place in the scheme.

"The significance of the classification lies in the skeleton which is afforded all science to bring some measure of order out of the world's present chaotic knowledge of the systems of various kinds.

"All systems find a place in this synthesis—atoms, comets and galaxies; man, radiation and the space-time complex. When looked at in this objective way, human beings, and all associated terrestrial organism, appear only parenthetically in one of the subdivisions of the class of collodial aggregates."

Prof. Shapley discussed the concept of the cosmoplasma.

"This," it was explained, "is at once the most mysterious and fundamental part of the universe, and only recently has come under direct experimental study. In brief, it is the substratum of materials throughout the universe, between planets, stars and the galaxies.

"It has no obvious systematic organization. Hence it includes such diverse constituents as the high speed shooting stars, interstellar calcium gas and radiation itself.

"Though no one has even seen an electron, the smallest thing included in the classification, they have been proved to exist in several ways. They give forth flashes of light that can be photographed. They have caused the bending of X-rays as they pass through a substance."

A Meeting Place for Readers of Astounding Stories

Likes the 'Corner"

Dear Editor:

This month's issue, May, has the best collection of letters you've ever published. All it lacked was a letter from Bernard J. Kenton, that master of epistles and super-science stories. One of your Readers would like to have "The Readers' Corner" omitted. For heaven's sake, don't take it out! I recognize it as one of the best features of our mag, and whenever I open the covers, turn to it directly after having glimpsed the table of contents and the announcement of the stories to appear in the forthcoming issue.

Mr. Joseph R. Barnes—whose letter I enjoyed immensely, incidentally—will be interested in knowing that "The Marcot Deep" is already in book form and that "The Disintegration Machine" and "When the World Screamed," all by the same author, are under the same covers. He also will be interested in learning that Ray Cummings' fine story, "Sea Girl," is also between hard covers.

The idea of putting out a quarterly is a dandy. The other science fiction quarterlies are mere text-books; there are, occasionally, of course, a few exceptions. The thought of the sort of fantastic action stories Astounding Stories publishes, put together in a magazine doubly thick, is a pleasing one to contemplate. Reading a story the length of "Brigands of the Moon" and of such literary merit, complete in one issue, is a thrill to be looked forward to. By all means put out such a magazine and have stories by Jack Williamson, R. F. Starzl and Edmond Hamilton, three of your best writers, in the first issue.

I'm glad to see that Starzl is coming back with the next issue. More from him, please. And Hamilton and Williamson should appear more frequently, too.

A question, Mr. Cummings: Shades of Polter and Tugh!—why must you always have a deformed character in your stories? Do they appeal to your dramatic sense?

The news that we're going to have a story from Francis Flagg brings raptures of delight to my homely face. If it's a dimensional story, I'll cheer twice. When it comes to writing that kind of a story, Flagg's the king of them all. For sheer interest and originality, he's got his contemporaries in that field outdistanced with a distance that can only be counted by light-years.

A pat on the back for Booth Cody and Sears Langwell, two staunch supporters.

All our magazine needs is a story about time crusaders, or a planet of mechanical men

Omitting the authors already mentioned, I consider my favorites to be Rousseau, Eshbach, Diffin, Ernst, and Hal K. Wells.

The best story you ever published? Who am I to answer? Why not put it up to the Readers for popular vote?—Jerome Siegel, 10622 Kimberley Ave., Cleveland, Ohio.

Explanation Wanted

Dear Editor:

This is my first letter to you, but I am a consistent Reader of Astounding Stories, and look forward to all of the coming issues. I have in mind a question, a friendly one, not one that I expect to or hope will seem to be trying to dampen any theories. This rocket-ship propulsion: as I understand it, there is a void between all planets, etc. If this is the case, how then can a rocket-propelled space ship go across this void? Since the exhaust of the rockets must rely on some material of a sort, or rather some sort of resistance to push the ship along, how does it push on nothing? Of course, near Earth it has the ground and then the atmosphere to push from, but out in the void, why not cut off and save fuel, therefore saving an extra heavy load of explosives, if rocket-ships were really practical in space flying? Yours for a thicker Astounding Stories.—H. M. Crowson, Jr., Sumter, S. C.

Better Than Love Stories

Dear Editor:

I have started to read the Astounding Stories and enjoy it very much, although I do not find very many girls writing in to the "Corner." This mag is a thousand times better than all those love story magazines, and besides these stories are educational.

I would rather read Astounding Stories than eat. They are not too scientific to be boresome, but they are just good enough to be real interesting.

I wish you would publish some more stories like "The Lake of Light," "Dark Moon," etc. I especially like stories of the future and interplanetary novels.

Anyone wishing to correspond with me will be welcome, as I love to write letters, and especially to anyone interested in the same things that I am.—(Miss) Bernice Goldberg, 147 Crescent Drive, Mason City, Iowa.

Kidding the Editor

Dear Editor:

I have just finished your January, 1932, issue of Astounding Stories. It was superb.

Imagine my delight and surprise when I purchased the first issue this year! Smooth edges! Good quality of paper! I had a few other articles to purchase but I forgot all about them when I saw your magazine and rushed home to read it.

It had a most admirable cover design by your best artist, H. W. Wesso. I turned to the Contents Page. The first story was by my favorite author, Ray Cummings, and called "The Space Car to Mars." Hot dog! My favorite theme, interplanetary travel.

All the rest of the Authors were my favorites too! Edmond Hamilton, Capt. S. P. Meek, S. P. Wright, A. J. Burks and a short story by Jack Williamson.

I turned to the next pages and lo and behold, what do I see but an editorial. Wonders after wonders! It was called "The Possibilities of Space Travel." I was by this time beginning to think that at last the Editor had achieved a perfect magazine, and when I turned to the first story, the one by Ray Cummings, I knew it. There was a double-page illustration by Wesso in soft and realistic *colors!* Think of it! *Colored* illustrations for each story!

Well, I was so excited that I could hardly read, but at last I began. Boy, can Ray Cummings write interplanetary stories! Y como! (And how!) He wove scientific explanations into the story so very skillfully that one learned the scientific facts without knowing it. When he thought that the explanation of some invention would be boresome, he put a little note at the foot of the page. This, I remembered, was an admirable feature in his story "Brigands of the Moon," which you published two years ago.

I then turned to "The Readers' Corner" only to discover that its name had been changed to "The Observatory." (I expect this name was taken from the suggestion of P. Leadbeater in the March, 1931, issue.) I discovered also, to my delight, that at the end of each letter the Editor made a few comments. I finished reading the Readers' letters and on the next page I found this headline: "Science Questions and Answers." I read these with enthusiasm.

I forgot to mention the raise in the price to twenty-five cents, but that is immaterial to me now since I have the perfect science fiction magazine. You have surely hitched your wagon (magazine) to a star now!—Clay Ferguson, Jr., 810 Park St. S. W., Roanoke, Va.

Sugar Candy

Dear Editor:

It is very seldom that I write to any page like "The Readers' Corner" but I have gotten rather tired of all those knocks. So I am writing to say that I have missed only one of your issues since the second, (Feb., 1930) and have found only one not to my liking, and I have forgotten what that is.

I have no comment to make on your Authors. I don't care who writes it or what his literary reputation is—as long

as the story is good; and you wouldn't print it if it weren't.

As for exact scientific data—away with it. Some may wish to be bored with it, but I prefer action. I like your pictures. They are bizarre and give one an idea of what the Author is trying to convey. And they intrigue the interest before the story is read. I also like the size, because it is not awkward, and I like the edges because they make the pages easy to turn.—Mrs. Margaret M. Phinney, 1632 W. 3rd, Plainfield, N. J.

"Becoming a Habit"

Dear Editor:

The May Astounding Stories seems to have nothing but complimentary letters in it. Mr. Magnuson probably tore out his hair when he saw all those letters. Not that Astounding Stories fully deserves all that praise. As one Reader said, words are inadequate to describe how wonderful your magazine is; however, I do not agree with those who denounce some of the Readers for making criticisms and suggestions. No magazine can be absolutely perfect, although Astounding Stories comes pretty near it. Even if it were perfect, the Readers would have to keep on making criticisms and suggestions in order to keep it that way. Besides, "The Readers' Corner" would become pretty dull and lifeless if you printed nothing but flattering letters. Most of the Readers who make unfavorable criticisms really have the welfare of the magazine in mind, else they wouldn't write at all. All of them aren't grouches. For example: a certain person sent one of the Science Fiction magazines about the most vicious and uncomplimentary letter that magazine had ever received. Yet in this issue of Astounding Stories he jumps on the knockers for daring to say anything against Astounding Stories! So you see that all knockers are not hopeless!

I notice that you have complied with one of my requests, and have published an autobiography of Mr. Wentzler, although there is no picture. Perhaps, as Mr. Wentzler suggests, that is for the best. The readers of Astounding Stories are accustomed to pictures of grotesque and weird-looking inhabitants of other planets, but a picture of Mr. Wentzler may prove to be too much. Or, if you do put it in, you might entitle it "Wesso's Conception of a Martian."

I hope Mr. Wentzler does not take the above paragraph too seriously. Like him, I was hit on the head when I was but a babe. In my case, it was a bronze statue that proved to be my undoing. Unfortunately, they were never able to straighten out the bend in that statue, which was the result of its contact with my dome.

As for the stories in the May issue, they were all perfect, every one of them. Having all the stories perfect in each issue is becoming a habit with you. Keep up this habit. For first place I nominate "When the Moon Turned Green." I considered Mr. Wells' previous story, "The Gate to Xoran" the best short story you had ever printed, but the later one surpasses it. You will not be making a mistake if you give us many more stories by this Author. I do not need to say anything else about the rest of the stories—they are all excellent.

Don't you think that it is about time for Astounding Stories to become a semi-monthly?—Michael Fogaris, 157 Fourth Street, Passaic, N. J.

Located at Last

Dear Editor:

I read every Science Fiction magazine on the market, and can truthfully say that yours is the best of them all.

Of course, there is always room for improvement, and some of the stories published in the May issue were not so hot. Meek always gives me a pain in the neck, but Cummings is an ace, though the installment in this issue dragged considerably. In Diffin you have a master writer; and I was tickled to death to see finally in "our" mag a story by that peerless team, Schachner and Zagat.

I was wondering how long it would take you to locate them, as you have done with most of the other stars in Science Fiction. —Bill Merriam, Ocean Front, Venice, Cal.

"Stories Aid Considerably"

Dear Editor:

I cannot rightfully say what story was the best in Astounding Stories. For the man who balances stories for their values is just kidding himself. That is my theory and I am ready at all times to stand in back of it.

Though I have only been reading Astounding Stories since January, I am a thoroughly convinced fan. For the past two years I have been puttering with chemistry and physics in a laboratory of my own, and the science mentioned in these stories aids considerably.

I would sincerely appreciate letters from Readers of Astounding Stories. I will answer all.—Lawrence Schumaker, 1020 Sharon St., Janesville, Wis.

To the Rescue, Somebody!

Dear Editor:

You're getting better all the time. The April number was the best yet, and the May issue is not far behind it. The cover on the May issue was wonderful.

"Dark Moon" is the best story by Diffin that you have yet printed. "When the Moon Turned Green" and "The Death Cloud" are both masterpieces.

"The Exile of Time" is a fine story, but I cannot understand the explanations. How could the murder of Major Atwood be mentioned in the records of New York? Why could not one see events in

which he participated? Of course, Ray Cummings perhaps knows more about it than I, but I think a lot of his ideas are the bunk.

I do not think that your stories should be full of science and nothing else, but they should at least observe known scientific facts.—J. J. Johnston, Mowbray, Man., Can.

A "Two-Timer"

Dear Editor:

I was surprised but pleased to receive the answer to the question I asked in my letter to you. It is indeed a pleasure to read a magazine that takes enough interest in its patrons to personally answer a letter written to it. Thank you very much.

And I am certainly glad that we are to get a sequel to "Dark Moon." I wish that I could personally tell Mr. Diffin what I think of his writing.

I am anxiously awaiting the next issue of "our mag." It certainly does seem a long time between issues. When are you going to start putting it on the stands twice a month? I know that thousands of Readers would bless the day you did it.

Please keep up the good work; and I know you will, for the longer I read A. S. the more I enjoy it.

The serial, "The Exile of Time," is a story par excellence. But I know the forthcoming sequel to "Dark Moon" will be a super-story.

My idea of reading is that if a story is worth reading once it is worth reading twice, and I have never seen any story in your book that was not worth reading once. Nuff said.

I will answer any letters written me. I hope to hear from plenty of Readers.—C. G. Davis, 531 S. Millard, Chicago, Ill.

And Sequel It Has

Dear Editor:

I have just finished the May number of Astounding Stories, and want to send my contribution to "The Readers' Corner."

The novelette, "Dark Moon," by Diffin, is rather an outstanding story, in my opinion. It is plausible and convincing, and the literary quality is high. I have a feeling that this should have a sequel, and wonder if others will not agree with me. That Astounding Stories is the best of the Science Fiction Magazines is something that scarcely lends itself to argument. Without question, it leads them all. Take the present number for instance: Diffin, Meek and Cummings, three top-notchers, all in one issue.—A. J. Harris, 1628 Bushnell Ave., South Pasadena, Cal.

I'm Afraid Not

Dear Editor:

I have read every one of your Astounding Stories and think there is no other magazine on the market like it. Only one kick; it doesn't appear often enough. I should like to see it every week; every two weeks, anyway. I like every story you print, and I think the size of your magazine is perfect. I have saved very issue I read, and now have seventeen of them.

"Phalanxes of Atlans" and "Marooned Under the Sea" were especially good. "The Readers' Corner" is fine, but I don't like so many brickbats thrown. I should like to see more bouquets given to you.

There is one thing I'd like to see you print. You probably have heard of the Fox Movietone picture, "Just Imagine," an interplanetary story of 1980. I'd like to see it printed in Astounding Stories more than anything else. It would make a fine serial. I don't suppose it would be possible for you to print it, though, would it?—Ernestine Small, 1151 Brighton Ave., Portland, Ore.

Better to Verse

Dear Editor:

Astounding Stories can't be beat;
Its every issue is a treat.
The finest authors of the age
Appear upon Astounding's stage.
There's Diffin, Cummings, Leinster, Burks;
An all-star cast that's sure the works.
Harl Vincent, Wells, and Starzl, too,
Belong among this famous crew.
Ed Hamilton and Vic Rousseau
With Captain Meek complete the show.
Together they are sure the best;
That's why Astounding leads the rest!

—Booth Cody, Bronx, N. Y.

Another "Two-Timer"

Dear Editor:

I have just finished reading the May issue of Astounding Stories for the second time. I have been reading Astounding Stories for over a year, and so far I can find only one thing wrong with it, and that is that it is not thick enough. In other words, you do not put enough stories in it.

Some people who write in to the "Corner" say that the paper is rotten. I still have all my magazines, and the paper is as good as new. The paper is also good on the eyes, as it does not reflect light like a mirror, as some paper does. Some people say the pages are uneven and hard to turn. Like Mr. H. N. Snager, I become so interested in the stories I do not notice such trifles. Anybody who yells about the color of the cover, the durability of the paper, is not very interested in Astounding Stories.

Why don't you either print a full page picture at the beginning of each story or else keep the half page picture at the beginning and put another picture halfway through the story?—Wm. McCalvy, 1244 Beech St., St. Paul, Minn.

A Buttercup for Paul

Dear Editor:

Congratulations! Astounding Stories has scored again! Not satisfied with illustrations by the mighty Wesso only, you have secured a drawing by the equally mighty Paul! May we see many more by him?—Thomas L. Kratzer, 3598 Tullamore Rd., Cleveland Heights, Ohio.

Nerves Now Better?

Dear Editor:

In Gould you have a fine illustrator; in Wesso a better one, but as I skip the page on which the story, a truly remarkable one by R. F. Starzl, "The Earthman's Burden" is on, my eye is caught by —yes! a drawing by Paul, good old, reliable Mr. Paul, the king of Science Fiction illustrators. Now that you have him on your artist's staff I wouldn't feel at all bad seeing a painting of his on the cover.

The June issue was a dazzler. "Manape the Mighty" held me spellbound. The others were all excellent stories. The cover painting by Wesso was good, but I have already seen one of that sort in a previous issue. Why not give us more interplanetary illustrations of space ships and the like as in "Brigands of the Moon"?

Another thing, it is nine-thirty. I must be asleep by eleven-thirty in order to start for school early the next morning. I allow myself two hours in which to read Astounding Stories. I turn to the contents section; I see a story there which I wish to read. It is on page 604. I turn the pages; 609, 601, 607 come in rapid succession, all but the page I look for. This goes on for some time until at last the roughened edge of 604 comes into view. By then my nerves are on edge and I find it is almost eleven-thirty!

But I cannot say that you do not stand up with the foremost of all magazines, and the way you are improving now you'll soon forge far in front.—Arthur Berkowitz, 768 Beck St., New York City.

Some Goal!

Dear Editor:

Permit me to congratulate Mr. Diffin on his latest masterpiece, "Holocaust."

Every once in a while Mr. Diffin produces a story that bids fair to eclipse all its contemporaries. His former story, "The Power and the Glory," could also be placed in that category. Somehow, that story has become indelibly written on my memory. The philosophy expressed in it was overwhelming. It would have done justice to a Shakespeare.

And now, you can imagine how delighted I am to learn that Mr. Diffin has once more graced us with a yarn of the same class.

Man, if you continue to publish such stories as these frequently, you'll have the public terming Astounding Stories literature of the highest grade! However, I won't entreat Mr. Diffin to write these stories spasmodically, as the long wait between tales adds lure to the stories.

And now for Mr. Burks. Ah—here is an extraordinary chap! Mr. Burks is your most versatile author. Of his several stories, each has opened up a new vista in the field of Science Fiction, and he is a thoroughbred in each endeavor. If you want to be convinced, read the opening chapters of "Manape The Mighty," and I will wager any sum you won't lay down the story until you've read every word.

As a matter of fact, all the stories are good. And the bill for next month appears to be exceptionally unusual. It is very evident that you are on the road to perfection. Smooth cut edges, the acquisition of the greatest of artists, Paul, all point to the accelerating progress Astounding Stories is achieving.

We Readers are frequently asked as to how we would run the magazine if we were Editors. Well, here is my conception of the ideal magazine:

Smooth paper, no advertisements whatsoever, the interior illustrations done by an artist with the talent of a Paul and a Wesso combined, and made in water colors, too. Then I would only have such renowned Authors as Burroughs, MacIsaac and a few others. I suppose that's the eternal dream of the modern Editor, but who can say that you, Mr. Bates, won't evolve Astounding Stories in the same manner. At any rate, there's a goal to aim for.—Mortimer Weisinger, 266 Van Cortlandt Ave., Bronx, N. Y.

Guilty

Dear Editor:

You are hereby summoned to appear in Court on attempt of murder. Following are the charges: Stopping my heart from beating when I saw the smooth edges in Astounding Stories, and making my heart miss five beats when I saw "The Earthman's Burden" illustrated by Paul!

I now think Astounding Stories has reached its highest peak. Arthur J. Burks' story was a wow. I hope he works on a story as he said he would in "The Readers' Corner" if he gets enough requests.

And Charles Willard Diffin! Here's a writer for you. I think the first story he ever wrote was published in Astounding Stories. Don't lose him. His "Holocaust" is his best, with the probable exception of "The Power and the Glory." I don't think the last mentioned ever got enough praise. I expect to see it reprinted some day in The Golden Book Magazine. It's distinctly smooth paper style.

And of course Sewell Peaslee Wright's "John Hanson" stories are top-notchers.

And Ray Cummings. Must we mention his story? We all know what to expect when we read one of his stories. I hope you have another serial by him soon.

I'm sure you'll be deluged with letters

because of the even edges and the illustration by Paul (who should draw at least two in every issue), but I hope you'll print my letter, because I never had a letter of mine in print, and want to get a thrill seeing this published.—Anthony Caserta, 4575 Park Ave., New York, N. Y.

"Very Pretty Problems Here"

Dear Editor:

The letters by P. Schuyler, J. N. Mosleh, and Jackson Gee in the last number sure do raise some very neat possibilities in Science. Anent travel in time, just what would you, Mr. Schuyler, expect to see if "John Doe" at 40 years (1931) went back to 1892 and met "John Doe" of that date on Main Street of his old home town? I suspect that two bodies cannot simultaneously contain the same ego, constant-entity, personality, or soul.

Which brings me to Mr. Mosleh, to ask: Just how is the self-realizant ego, which is conscious that "I am I" unchangingly for life, in any sense a derivative of the unstable, rapidly changing body?

Mr. Burks and Mr. Lee elucidate a very pretty little problem on the same lines. The cranial transplantation and the "atomic patterns" are admittedly scientifically and reasonably possible. But there is a real point of doubt: Would the personality accompany the brain in transplantation? True, the brain is the control room; but—?

And would the "atomic patterns," perfectly as they could duplicate a body, which is unstable by nature, work on the essentially stable ego (relatively) with its inherent capacity for continuity?

If not, would not the synthetic "Extra Man" be a human being minus personality? Some very pretty problems here. I'd much like to see a story along the lines of item 3 in Mr. Burks' letter.—L. Partridge, Box 84, Cornish, Me.

What Price Smoothness?

Dear Editor:

I have just finished the June issue of Astounding Stories. The cover was excellent, as were all the illustrations, except perhaps Manape's arms should have been a little larger.

I see that the edges of the paper are now smooth, but still the leaves stick out beyond one another, so what good does that do?

"Manape the Mighty," by Arthur J. Burks, was superb, gripping. I suppose a lot of Readers will rise violently against the love interest, but, I ask you, just where would this particular story be without the romance in it? This particular story, you understand; not every story.

"Holocaust," by Charles Willard Diffin, was next best, with "The Man from 2071" a close second.

"The Earthman's Burden" was at least entertaining, which this installment of "The Exile of Time" was not.—Robert Baldwin, 359 Hazel Ave., Highland Park, Ill.

Time Trouble Answers Wanted

Dear Editor:

I have read your magazine for nearly two years, but this is my first letter to the "Corner." The first and second installments of Ray Cummings' "Exile of Time" prompted me to write this. There is a story you can well be proud of. I should like to obtain it in book form. Mr. Cummings is a wonder. I have read many time stories, but his is at the top of my list.

If there is any other "time" fan in A. S.'s "Readers' Corner" I should like to have a letter discussion on it with him. None of my acquaintances care a whoop about that type of story, so I have to thrash out all my problems by myself.

There are some questions I would like to ask about "The Exile of Time."

1—In the event of the appearance of the time-traveling cage, the story ran, to use Ray's own words: "Suddenly before me there was a white ghost. A shape. A wraith of something which a moment before had not been there. The shape was like a mist. Then in a second or two it was solid."

Why should the cage appear as a mist at first? If there is any amount of time separating two things, those two things are invisible to each other, are they not? Any amount of time would include a second, and even a millionth part of a second. In that case, the cage should suddenly appear in the twinkling of an eye, with no trace of a blur.

2—Supposing I were standing at a spot five feet from a time-traveling vehicle. The latter would be traveling through time at 3 P. M., while I am at 2 P. M.—an hour's difference between us. It would be invisible to me then, but an hour later when I would be at 3 P. M. and the machine at 4 P. M., then I would see it as it appeared at 3 P. M. Whatever movement it would make in space, I would not see until an hour later. Is that right? Then is it not possible that each individual is existing in a different time realm? And we see them, or I see the other fellow as he appeared when my time caught up with his? I had better quit before I get hooted off the stage.

3—If a man invented a time-traveler and went back to the year of the beginning of the World War, knowing all he has read in history, could he not take steps to prevent a war that has already happened? Or would that power be denied him? Somewhere in the story it said that the past cannot be changed, and that any effort to do so would be useless. In my belief, no matter where or when a man goes into the past, if he appears in a year or day that has already gone by, he

is changing the past. Then there should be no room for doubt: time-traveling is impossible. It never will be done (An Astounding Stories fan should be kicked for using the word "impossible"!).

Let's have more good thought-provoking time tales. And get lots of stories from Cummings—he's a wow. I sure would like to spend an evening at a campfire with him.—Allen Spoolman, 613—4th Avenue, W., Ashland, Wisc.

"Eh, What?"

Dear Editor:

Just got my June issue of our good mag, Astounding Stories, and I think that it is great. One thing you should do, however, is have a more mechanical cover design.

In regard to Miss Gertrude Hemkin's letter in the June issue of A. S., let me say that I just wonder what she would like to expect in our "The Readers' Corner" if she does not like to hear what others think of our Astounding Stories. Maybe she would like to read about checker debates or the like. Eh, what?

If Rex Wertz of Oregon, who is now located somewhere in Los Angeles, will drop me a line, perhaps we can become acquainted as he suggested.—Edward Anderson, 123 Hollister Ave., Ocean Park, Cal.

Hope He Does

Dear Editor:

I have never been interested before in a magazine enough to write to their departments, like "The Readers' Corner," and I have read plenty of magazines.

"Beyond the Vanishing Point" stands head and shoulders above any story I have ever read. I have only one thing to say about your other stories: they are almost as good as the one I just mentioned.

I have a few words to say about these people who throw brickbats at every story they read. I wouldn't be surprised if they just the read the story so they could find something wrong with it. There's one in particular who wrote a few lines in the June issue about your taking the word "science" off the front page, saying there was no science in the magazine, anyway. What does the title say? Well, that's what 90% of the Readers want, anyway. I hope that chap reads this.

Well, I'll sign off. Here is a little toast to the magazine: "Long may it live."—Earl Rogers, 409—16th St., Galveston, Tex.

Two, Better Than One?

Dear Editor:

The two outstanding stories in the May issue of A. S. were "The Death Cloud," by Nat Schachner and Arthur L. Zagat, and "Dark Moon," by Charles W. Diffin. Common reasoning tells me that the heads of two Science Fiction writers can formulate a story better than one. I couldn't help admire Mr. Schachner and Mr. Zagat when I read their story because of the cleverness shown in it.

Please give us a story by them every month.—Ray Y. Tilford, Rockport, Ky.

"And Here I Am"

Dear Editor:

It's about time for me to concede that your or "our" magazine is the best I have read. Ten issues have come into my hands and I am perfectly well satisfied with the line of fiction that you publish. I have read about fifty different magazines on the market, and I am sure that Astounding Stories is the best of them all. I have followed the magazine for seven months and that is the best amount of reading any magazine can boast for me. In your case, if the magazine lasts seventy years, you can be sure that I will read it for that period of time (provided I live that long).

I notice that several brickbats have come into your hands and that you have printed them. Well, that shows sportsmanship on your part. I would suggest to those who are not satisfied with Astounding Stories to duck their head in a pail of water and pull it out after a period of ten minutes. Those who criticize the stories because of the lack of science have no idea what it takes to write a story. Please be willing to concede the Author the right of way. He is giving his theories and not yours. However, in some cases where the truth is an established fact, I can see where the Readers may present a justified argument. But they should remember that we are not all perfect and that mistakes are made by all. It is not fair to criticize an Author by denouncing him.

I don't favor reprints at all, but I can stay with the majority if they do. It is a foregone conclusion that you can fool some of the people some of the time, but you can't fool all of the people all the time. In this case substitute the word "please" in the saying for "fool."

I am at present reading Charles W. Diffin's novel, "The Pirate Planet." It is one of the best interplanetary novels that I have ever read. Give us some more of Diffin; he has the goods. I must say that you have an immensely long list of popular authors, and it must cost quite a little amount of money to maintain them.

Keep the size of the magazine as it is now. It fits conveniently into my bookcase, and I believe many of your Readers will say the same.

Now some of my favorite stories. "The Ape-Men of Xlotli" was one of the best stories that I have read in years. Give us some more along this line. It offers rest after one has just finished reading an interplanetary novel.

"Monsters of Moyen" was another story that I greatly enjoyed. Very few

people believe that the world shall ever have a conqueror again, and I am one of them; but it is interesting to see if there ever will be a conqueror and what means he shall employ to get that title.

"Brigands of the Moon" was the worst story I read in your magazine. That must have been Mr. Cummings' off story. But he certainly has come back fine through his later stories.

"The Tentacles from Below" was another great masterpiece. Anthony Gilmore's tale was the first that I have read of that author, and I will be delighted to see more.

Funny how I developed into a Reader of Science Fiction. I exhausted all other fields of reading and having nothing else to read I delved into a science magazine and here I am.—Michael Racano, 51 Brookwood St., East Orange, N. J.

Turns to It First

Dear Editor:

The June issue of Astounding Stories can't be beat. What an issue! As it seems to be the usual thing, I'll start at the front and go to the back.

The cover: very colorful; another proof of Wesso's talent. And speaking of artists, I was very pleasantly surprised at the unexpected illustration by Paul. I certainly hope you can get him, if not for cover pictures, at least for the inside illustrations. (Too bad you are modest about printing complimentary letters, for I mean this to be all roses, no brickbats.)

"The Man from 2071"—another good story of "John Hanson's." "Manape the Mighty," although somewhat like the Tarzan series, is a wonderfully fine story. "Holocaust"—good. "The Earthman's Burden," as all of Starzl's, was exceptionally good. "The Exile of Time"—getting better every issue.

"The Readers' Corner" as usual was one of the most interesting parts of the magazine. I always turn to it first, for I know I will have an enjoyable time reading every letter. And, by the way, the significance of "Manape" just came to me. Don't know why I didn't see it before.—Linus Hogenmiller, 502 N. Washington St., Farmington, Mo.

Likes the "Joke"

Dear Editor:

Although I have read only two issues of Astounding Stories, I feel the urge to write a line. The June number was better than the May issue. Arthur J. Burks' story, "Manape the Mighty," was excellent, though I am not so strong for the idea of having Barter escape the apes and carry on his experiments as suggested by the Author. It would be against common sense to have the apes allow him to make a getaway. The prize winner in the May issue was "Dark Moon." There might be a sequel to that, and I'd like to see it.

I like a little variety in a magazine. The Readers who say they do not care for stories scientifically impossible may be right; in that case "The Exile of Time" is the greatest joke ever written—yet I like it immensely. One thing that is impossible is the destruction of matter. It can be broken up, or condensed as in "When Caverns Yawned," but not destroyed completely.

Mr. W. H. Flowers evidently has a grudge against the fair sex. The love interest is not necessary in short stories, it's true; but what kind of a long novel would it be if the hero had no incentive, nothing to risk his life for, except a possible word of praise from the scientific world?

No matter how much a man loves his work it is my opinion that he would not die for the purpose of proving his point.

Not being able to take a hint, the knockers still appear to mar an otherwise perfect day—this time in the person of Harry Pancoast. If Astounding Stories ever gets so bad that not even one story in it is of interest to me—I'll just drop out of the waiting line—and keep my mouth closed.—Richard Waite, 6 South Ave., Warsaw, N. Y.

Never Noticed That

Dear Editor:

Just bought my latest copy of Astounding Stories, and what an edition! First, the cover (Wesso has all others beat by a mile). Then, the stories. Well, take "Manape the Mighty": it is one of the best Science Fiction stories I have ever read. "The Exile of Time" was great.

Have you ever noticed that almost every critic of Science Fiction is either a teacher or a female? Jim Nicholson and I certainly know that.—Billy Roche, Sec. Interplanetary Dept. of the B. S. B., 101 St. Elmo, San Francisco, Cal.

Sunflowers for All

Dear Editor:

Miracles do happen! I was never so thoroughly astounded in all my life as when I received the great June issue of "our" magazine with *straight* edges! Thank you and all concerned for publishing "our" magazine sans rough edges. The smooth edges ought to cut the reading time of Astounding Stories down to an hour and forty-five minutes as we always used to waste a lot of time fumbling about with the pages.

But if I was astounded at the long awaited straight edges, I was still more amazed at the great innovation of an illustration by Paul! Let's have more and more of his remarkable drawings. Astounding Stories is truly great now with its fine Editor, splendid Authors, excellent stories, worthy illustrations, essential "Readers' Corner," Paul (Ah!) and good binding! Yes! You heard right! I said: *good* binding! Of course it makes amusing material to write about

the binding and remark that it comes off after once handling it, or that the paper is soon worn to shreds, but such matters shouldn't be honestly believed. I have every issue of Astounding Stories (eighteen great numbers!) and each and every issue is as good as new. I have never had any trouble with the covers departing from the rest of the magazine or the pages becoming moldy.

Sewell Peaslee Wright's "The Man from 2071" is just perfect. I enjoy nothing more than one of his realistic stories of Commander John Hanson. We want more! Arthur J. Burks' novelette, "Manape the Mighty," was clever. I had a premonition that I wouldn't like this story, and in fact told a friend so. It just goes to prove that hunches can be wrong. Charles Willard Diffin should be proud of his "Holocaust." I'm sure that most Readers enjoyed it as much as I did. Of course, Starzl's "The Earthman's Burden" was a peach. His stories of other planets are always weird, bizarre, and yet they seem to ring true. That is the magic of R. F. Starzl! Paul illustrated it in his own unapproachable style. "The Exile of Time," as everyone agrees, is Cummings' best. I am waiting for its thrilling conclusion.

I am one who would like Astounding Stories to be a large size magazine, but it can easily be seen that everyone can't be pleased. If you'll just leave it the way it is—i. e., straight edges, illustrations by Paul, same authors and same excellent Editor—I'll be satisfied.—Forrest J. Ackerman, 530 Staples Ave., San Francisco, Cal.

"Great Relief"

Dear Editor:

The story, "Manape the Mighty," by Arthur J. Burks, was by far one of the most thrilling and educational stories that ever appeared in Astounding Stories. Of course, others will disagree, but an Author cannot please all. It is of great relief to change from the monotonous every day kind of stories that appear in Collier's, Liberty and The Saturday Evening Post to the refreshing and soothing "impossible" type of A. S.

Ever since the January issue, I've been an ardent pursuer of Astounding Stories. To me it is even more astounding that I seem to like it more and more each succeeding issue. I find it, undoubtedly, the best magazine of its type. I've tried others, of similar type, but it seems as if my mind couldn't grasp the knack of their stories, which were either boresome with scientific and technical explanations, or, as one might say, "not a darn thing to them."

R. F. Starzl is a wonderful author. Ray Cummings, Sewell Peaslee Wright, Charles Willard Diffin, Captain S. P. Meek, Edmond Hamilton, F. V. W. Mason and Murray Leinster are excellent.

There is one thing that I'd like to see in Astounding Stories, and I'm sure many of the Readers would, too. It is always my habit to read while eating. To finish the story in time, I pick the shortest one. Sad to say, Astounding has rather long stories. How about an occasional short story? I'm sure your readers will approve. They would go over with a bang!—P. Nikolaioff, 4825 S. Seeley Ave., Chicago, Ill.

Sometimes Gets Mad

Dear Editor:

Although I have been an interested reader of Astounding Stories since its inception, this is the first time I have written. Astounding Stories have been so good lately that I just had to write and compliment you on your good work. There are, however, some criticisms I have to make. The first is: I think Mr. W. H. Flowers of Pittsburgh, Pa., is right when he says you sometimes have too much love in some of your stories. The second is, I think it would be a good thing to put notes at the end of a page to explain some of the terms for the Readers who read mostly for the science part. That is what I do, and I get mad when I read something that does not give me the inside dope on it. Outside of that I think Astounding Stories can't be beat.

One more thing before I close. Keep Capt. S. P. Meek on your staff or I will stop reading Astounding Stories, as much as I would hate to do that. I think he is your best author by a long shot.—Wilson Adams, Seat Pleasant, Md.

From a "Female Woman"

Dear Editor:

The comment of Jim Nicholson in the June issue that it is only "the females" who consider him "cracked" for reading Science Fiction, and only women who do not care for science in the stories, moves me to break into "The Readers' Corner" for the first time.

I happen to be a "female woman," and it is the men in our family and circle of friends who laugh at me for buying every Science Fiction magazine and book that I can find. They call them my "nutty magazines." I have to admit that I do not understand much of the scientific explanation, since my mind does not run along mathematical or scientific lines, but I do mind having that in stories, for those who do care for it and can understand it, as I can simply skip over it, taking what I can grasp and letting the rest go. It doesn't spoil the story for me.

I have no criticism, constructive or otherwise, to make. I enjoy the stories with some romance involved, and enjoy those without equally well. My own preference would be that you continue using rough paper and your present mechanical construction, so that more money

will be available to pay for the stories. Few of us keep the magazines anyway, so there isn't so much need for expensive paper. I like interplanetary stories best, I think; but I was intensely interested in "Beyond the Vanishing Point," "Manape the Mighty" and "Holocaust." All different, but all very good. I can't remember one I did not like.

My work requires much study and concentration. I have recommended to several men who do similar mental work that they follow my plan of securing delightful relaxation by losing themselves in another world through Science Fiction magazines. Most of them find it as restful as I do.—Berenice M. Harrison, Angola, Ind.

Likes R. F. Starzl

Dear Editor:

It has been my purpose to write to you before, but due to an extraordinary amount of detail work which I have had to do, I have been unable to.

I have read your marvelous magazine ever since the first issue came into my hands, and I can honestly say that there is no other book on the market which has held my attention as long as yours has. I congratulate you on your very interesting magazine.

Arthur J. Burks, in his latest story, has conceived an entirely new type of story, and I, for one, think it very interesting. Plenty of science for the laymen and enough interest for the others.

I liked R. F. Starzl's story, "The Earthman's Burden," very much, and I hope you will have more by this author soon. His stories are perfect. Starzl is a deep thinker, and I am right here to say that there is a man who understands men and men's longings and inhibitions.—A. W. Gowing, 17 Pasadena St., Springfield, Mass.

"The Readers' Corner"

All readers are extended a sincere and cordial invitation to "come over in 'The Readers' Corner'" and join in our monthly discussion of stories, authors, scientific principles and possibilities—everything that's of common interest in connection with our Astounding Stories.

Although from time to time the Editor may make a comment or so, this is a department primarily for *Readers,* and we want you to make full use of it. Likes, dislikes, criticisms, explanations, roses, brickbats, suggestions — everything's welcome here; so "come over in 'The Readers' Corner'" and discuss it with all of us!

The Editor.

A LIVING, DISEMBODIED HEART

A DISEMBODIED heart, not only still steadily beating but writing, as it throbbed, a permanent, minutely precise record of its pulsations, was exhibited recently at Princeton in a demonstration of the newest instrument developed by science for the advancement of medicine and psychology.

The device, invented by A. L. Loomis of Tuxedo Park, N. Y., and perfected in collaboration with Dr. Edmund N. Harvey, professor of psychology at Princeton University, is called the Loomis chronograph.

It will facilitate study of the phenomena of heart action and the effect of drugs on that vital organ. The chronograph opens the way to the accurate measuring and recording of the speed and variation of human heart beats over long periods, even during the sleeping hours of the subject, which is expected to prove of great value to physiologists and criminologists.

The heart of the recent demonstration was that of a turtle, removed from the reptile while alive, freed of all extraneous tissue and suspended in a physiological salt solution exactly duplicating body conditions. In this state the organ continues to beat for thirty-six hours, at the same time setting down, by means of the chronograph, a graphic history of the approximately 72,000 pulsations it makes in that time. With each beat the tiny organism pulled down a little lever that dipped a fine filament into a drop of mercury and made a contact that transmitted an electric impulse to the chronograph. There it was translated to a fraction of a second into a record inked on a chart.

Introduction into the solution of nicotine—one part in 10,000—and of adrenalin—one part in a billion—was immediately noted by a marked retarding of the heart tempo in the first case and swift acceleration in the second.

Use of the chronograph to study the action of any heart that can be removed from the living body is possible, the scientist said, adding that a comparatively simple adjustment will make possible recording of the human heart by a device applied to the chest.

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33x4	3.08	1.15	29x5.00	2.90	1.35
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32x4½	3.20	1.45	31x5.00	2.90	1.35
33x4½	3.20	1.45	32x5.00	2.90	1.35
34x4½	3.48	1.45	33x5.00	2.90	1.35
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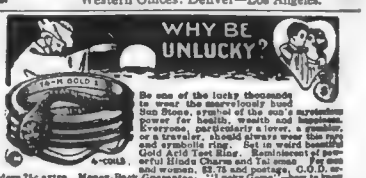

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31x4.75-19	3.45	1.15
32x4.50-20	3.45	1.15
32x4.75-19	3.45	1.15
33x4.50-21	3.45	1.15
33x4.75-20	3.45	1.15
34x4.50-21	3.45	1.15
34x4.75-20	3.45	1.15
35x4.50-20	3.45	1.15
35x4.75-19	3.45	1.15
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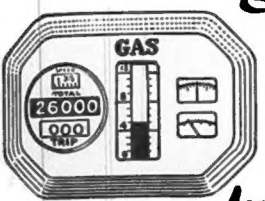

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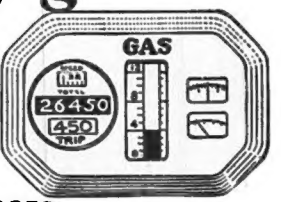

How to increase gasoline mileage has been a problem that Automotive Engineers have been trying for years to solve. Recently a world famous engineer made the statement that the energy produced by burning a gallon of gasoline would run an auto a distance of 450 miles. Other well known authorities go on record as saying that eventually it may be possible to get over four times as much out of gasoline as in the past.

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